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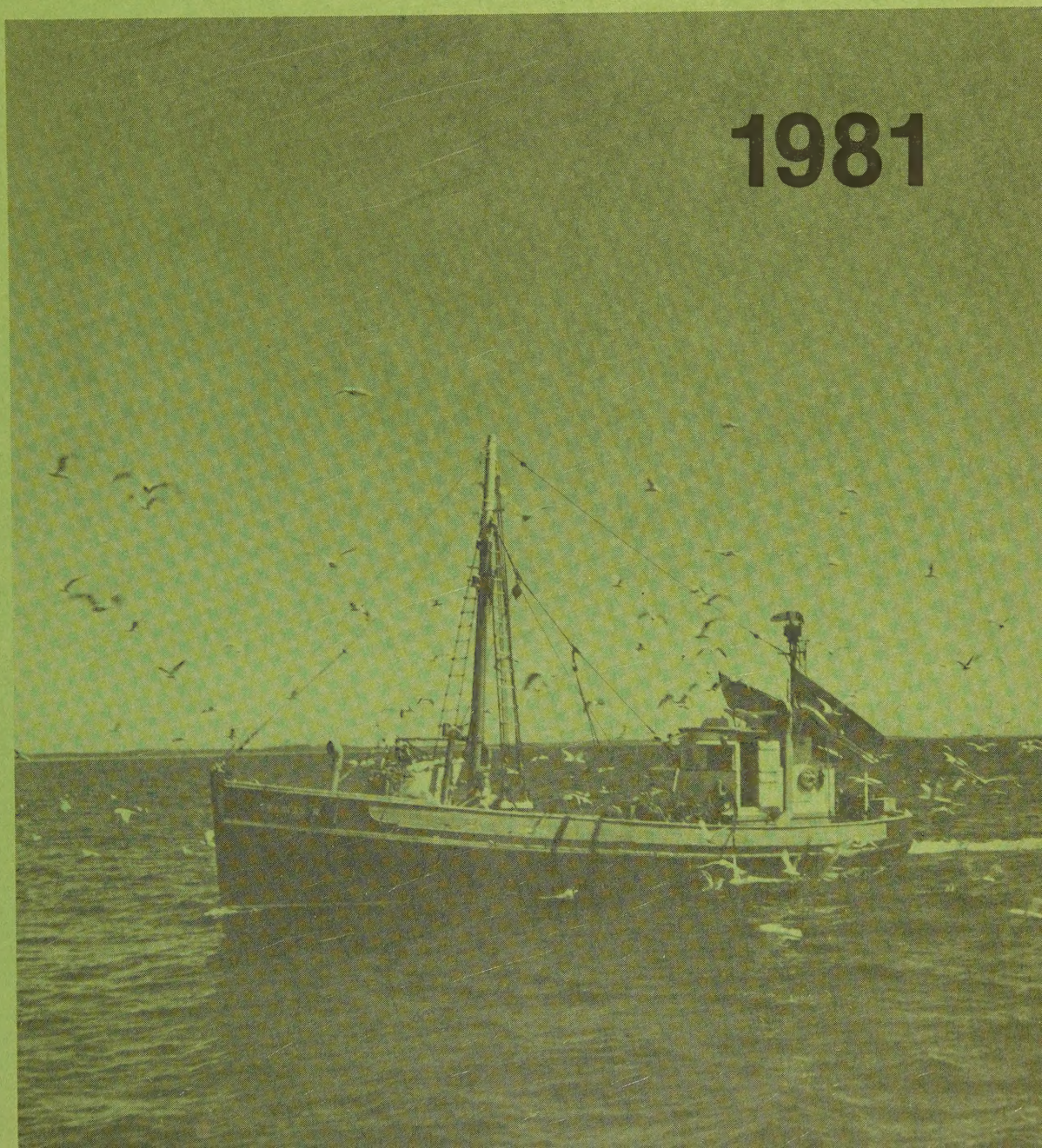
GRANT-IN-AID FOR FISHERIES Program Activities

1981



U.S. DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

U.S. DEPARTMENT OF COMMERCE

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GRANT-IN-AID FOR FISHERIES PROGRAM ACTIVITIES 1981

Prepared by
State-Federal Division
Office of Resource Conservation and Management

Washington, D.C.
March 1982

AUTHORIZATION

This report is submitted in compliance with the requirement of Section 9(a) of the Fish and Wildlife Act of 1956, as amended 16 U.S.C. 742d(7) and Section 2 of the Anadromous Fish Conservation Act of 1965, as amended 16 U.S.C. 757b.

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GRANT-IN-AID FOR FISHERIES

PROGRAM ACTIVITIES 1981

by

Grant-in-Aid Staff

INTRODUCTION

This is the 14th in a series of annual publications on program activities under the Grant-in-Aid for Fisheries Program of the Office of Resource Conservation and Management, National Marine Fisheries Service (NMFS).

Information presented in this report provides State program coordinators and administrators, Federal personnel, project personnel, and others concerned with research, development, conservation, and management of our fishery resources with a convenient reference to the grant-in-aid program. This publication will also facilitate planning, coordination, and integration of State, Federal, and private sector activities concerned with the fishery resources.

THE ACTS

The NMFS Grant-in-Aid Program is authorized under two Acts:

1. The Commercial Fisheries Research and Development Act of 1964 (Public Law 88-309 as amended) - Authorizes the Secretary of Commerce to cooperate with the 50 States, the Commonwealths of Puerto Rico and the Northern Mariana Islands, and the Governments of the Virgin Islands, Guam, American Samoa, and the Trust Territory of the Pacific Islands, in carrying out research and development of the Nation's commercial fisheries. Projects eligible for funding include research, development, construction, and coordination. Cost-sharing projects under subsection 4(a) are funded up to the 75 percent level of Federal participation, whereas projects under subsection 4(b) to alleviate resource disaster and under subsection 4(c) to establish new commercial fisheries may be financed 100 percent with Federal funds. This Act would have expired June 1973; however, it was extended by Public Laws 92-590, 95-53, and 96-62 for an additional 10 years, or to September 30, 1983. The authorized levels are $10 million for subsection 4(a), $5 million for subsection 4(b) and $500,000 for subsection 4(c).

2. The Anadromous Fish Conservation Act of 1965 (Public Law 89-304, as amended) - Authorizes the Secretary of Commerce to enter into cooperative agreements with States and other non-Federal interests for the conservation, development, and enhancement of the anadromous fishery resources of the Nation and the fish in the Great Lakes that ascend streams to spawn, and for the control of the sea lamprey. The program is administered at the Federal level jointly by the National Marine Fisheries Service and the U.S. Fish and Wildlife Service. Federal funds up to 50 percent (or 66 2/3 percent when two or more States cooperate), may be used to finance project costs. State fishery agencies, colleges, universities, private companies, and other non-Federal interests in 31 States bordering the oceans and the Great Lakes may participate under the Act. All projects must be coordinated with the State fishery agency concerned. The authorization for this Act expired September 30, 1979, but was renewed in November 1979, for an additional 3 years, or to September 30, 1982. The new Act: (1) set authorized levels at $11 million for fiscal year 1980, $13 million for fiscal year 1981, and $15 million for fiscal year 1982, (2) deleted language which places the burden for costs of operation and maintenance of facilities constructed under multi-state projects entirely on the States, (3) deleted a requirement that all title to lands acquired under the Act must rest in the Federal Government rather than with the State involved, (4) changed the amounts of funding a State may receive under Section 4(b) in any one year from $1 million to $1.25 million, and (5) initiated a 3-year emergency research and monitoring program to identify the factors responsible for the current decline in striped bass populations.

APPORTIONMENT OF FEDERAL FUNDS BY STATE AND AUTHORIZATION

Distribution of Federal funds to the States and others under the National Marine Fisheries Service grant-in-aid for fisheries program (Public Law 88-309 and Public Law 89-304) in Fiscal Year 1981, is given in the following tabulation:

State and Others	FY 1981 P.L 88-309	P.L 89-304
Alabama	$ 168,300	$ 78,300
Alaska	352,100	840,890
Arizona	29,300	
Arkansas	37,600	
California	352,100	414,140
Colorado	29,300	
Connecticut	29,300	75,430
Delaware	46,800	
Florida	352,100	
Georgia	91,800	17,000
Hawaii	51,700	
Idaho	43,900	
Illinois	29,300	
Indiana	29,300	
Iowa	29,300	
Kansas	29,300	
Kentucky	29,300	
Louisiana	352,100	
Maine	245,200	52,000
Maryland	206,000	110,200
Massachusetts	352,100	81,900
Michigan	29,300	45,700
Minnesota	29,300	
Mississippi	208,400	47,500
Missouri	29,300	
Montana	29,300	
Nebraska	29,300	
Nevada	29,300	
New Hampshire	60,600	140,000
New Jersey	169,900	
New Mexico	29,300	
New York	153,400	31,400
North Carolina	84,900	123,000
North Dakota	29,300	
Ohio	94,900	
Oklahoma	29,300	
Oregon	173,900	764,600
Pennsylvania	103,000	
Rhode Island	40,300	
South Carolina	32,700	66,000
South Dakota	29,300	
Tennessee	29,300	
Texas	352,100	
Utah	29,300	
Vermont	29,300	
Virginia	202,600	127,200
Washington	216,300	776,550
West Virginia	29,300	
Wisconsin	29,300	46,490
Wyoming	29,300	
American Samoa	150,700	
Guam	29,300	
Puerto Rico	342,100	
Virgin Islands	29,300	
Trust Territory of the Pacific Islands	29,300	
Northern Mariana Islands	29,300	
Pacific Marine Fisheries Commission	-	121,500
NW. Indian Tribes	-	40,200
TOTAL	$5,858,000	$4,000,000*

*Excludes Emergency Striped Bass Study Projects

CLASSIFICATION OF FEDERAL AND STATE FUNDS
BY ACTIVITY AND AUTHORIZATION

FISCAL YEAR 1981

Program activities cover various fields, including broad categories of research and development of commercial fisheries and conservation, development and enhancement of anadromous fishery resources. Seventy-three percent of the funds were used for research in such areas as the environment, freshwater finfish, marine finfish, and shellfish; 6 percent for collection of statistics; and less than 5 percent for each of the other program activities. Funding figures shown include both State and Federal dollars for all 1981 project segments.

Activity	Public Laws		Total	
	88-309 ($1,000)	89-304 ($1,000)	Dollars ($1,000)	Percent (Total)
Aquaculture	558	-	558	3.2
Construction	139	660	799	
Fish screens and stream improvement facilities	-	106	106	
Hatcheries and hatchery facilities	-	554	554	
Laboratories	39	-	39	
Vessels	100	-	100	
Coordination	356	142	498	2.9
Disease and parasite control	218	241	459	2.7
Extension service	676	-	676	3.9
Market development	137	-	137	0.8
Operation and maintenance	156	160	316	1.8
Planning	104	-	104	0.6
Research	4,818	7,742	12,560	73.2
Environment	173	-	173	
Finfish (freshwater)	466	135	601	
Finfish (marine or anadromous)	2,330	7,607	9,937	
Shellfish	1,849	-	1,849	
Statistics	1,059	-	1,059	6.2
TOTAL	8,221	8,945	17,166	100.0

PROJECT TITLES BY STATE AND PUBLIC LAW

WITH OTHER PERTINENT INFORMATION

FISCAL YEAR 1981

All 50 states, the Commonwealths of Puerto Rico and the Northern Mariana Islands, the Governments of American Samoa, Guam, the Virgin Islands, and the Trust Territory of the Pacific Islands, and certain Northwest Indian tribes are participating in the program under one or both authorizations. In FY 1981, 43 projects were completed at an estimated total cost (State and Federal dollars combined) of $12,513,000; 183 projects were initiated or are continuing at an estimated cost of $42,430,000. The average Federal share of the Public Law 88-309 projects is 69 percent; the average Federal share of the Public Law 89-304 projects is 49 percent.

Tabulation of completed and continuing projects including total cost follows:

	Completed Projects		Continued Projects		Total Projects	
Public Law	Number	Total Cost	Number	Total Cost	Number	Total Cost
		$1,000		$1,000		$1,000
88-309	29	7,276	127	24,100	156	31,376
89-304	14	5,237	56	18,330	70	23,567
TOTAL	43	12,513	183	42,430	226	54,943

A list of continuing projects and those completed in 1981, under each authorization by State, including duration, date completed, and page reference for project narrative, is tabulated on pages 5 through 18. Under Public Law 88-309, project numbers identify the Region administering the project by the first digit, project number sequence within the Region by next digit(s), followed by a letter to denote activity as R-research, C-construction, D-development, and S-coordination. Under Public Law 89-304, the first two letters, "AF" identify the project as anadromous fish, with next letter "C" for projects administered by NMFS, or jointly funded projects with U.S. Fish and Wildlife Service (FWS) with NMFS as lead agency, and "SC" for jointly funded projects with FWS as lead agency, followed by a number sequence within each State.

Public Law	Project number and title		Date initiated	Duration	Estimated total cost	Date completed	Project narrative
			Year	Years	Dollars	Year	Page
	ALABAMA						
88-309	2-330-R.	Research and development of Alabama coastal fisheries	1978	3	F-450,113 S-150,037	1981	31
89-304	AFCS-12.	Striped bass production and stocking experiments in Alabama coastal areas (Study No. 2)	1979	3	F-141,000 S-141,000 (Includes FWS share)		30
	AFC-13.	Increasing yield of striped bass fingerlings through intensive culture methods	1979	3	F- 51,600 S- 51,600		30
	ALASKA						
88-309	5-43-R.	Assessment of stream habitat and upland development-SE Alaska	1979	2	F-361,500 S-190,000	1981	28
	5-44-R.	King and tanner crab studies in Cook Inlet	1979	2	F-142,500 S- 83,000	1981	33
	5-45-S.	Program coordination	1979	2	F-258,000 S-150,000	1981	21
	5-47-R.	Investigations of life history and fishery for tanner crab in Alaska	1979	2	F-288,000 S-145,000	1981	34
	5-48-R.	Pandalid shrimp studies-western Alaska	1979	2	F-330,000 S-200,000	1981	35
	5-49-R.	Gulf of Alaska-Bering Sea groundfish investigations	1981	1	F- 82,100 S- 39,800		27
89-304	AFC-57.	Chignik sockeye studies	1978	3	F- 50,400 S- 50,400	1981	28
	AFC-58.	Program coordination	1977	4	F-220,600 S-327,400	1981	21
	AFC-59.	Pink salmon stock prediction - SE. Alaska	1977	5	F-395,000 S-828,900		28
	AFC-60.	Sockeye stock assessment and evaluation-SE. Alaska	1977	5	F-246,000 S-341,200		28
	AFC-61.	Copper River-Prince William Sound sockeye salmon catalog and inventory	1977	4	F-209,200 S-251,100	1981	28
	AFC-62.	Cook Inlet sockeye salmon studies	1977	4	F-424,900 S-562,700	1981	28
	AFC-63.	Yukon River salmon studies	1977	4	F-209,600 S-401,800	1981	28

Public Law	Project number and title		Date initiated	Duration	Estimated total cost	Date completed	Project narrative
			Year	Years	Dollars	Year	Page
	AFC-64.	Norton Sound-Kotzebue salmon studies	1977	5	F-152,500 S-232,000		28
	AFC-65.	Chignik sockeye studies	1981	1	F- 24,090 S- 48,780		28
	AFC-66.	Origin of chinook salmon in the SE. Alaska troll fishery	1981	1	F- 80,000 S- 80,000		28
	AFC-67.	Micro wire tagging of wild coho salmon stocks, SE. Alaska	1981	1	F-100,000 S-180,900		28
	AFC-68.	Copper River-Bering River sockeye salmon stock separation	1981	1	F- 40,000 S- 50,000		29
	AFC-69.	Bristol Bay salmon run forecasts	1981	1	F- 90,000 S-167,800		29
	AMERICAN SAMOA						
88-309	4-46-D.	Fisheries technical assistance	1979	3	F-249,800 S- 19,000		22
	4-47-D.	Statistical analysis of American Samoa fisheries	1979	3	F- 92,900 S- 8,300		36
	ARIZONA						
88-309	4-49-R.	Fish disease control station diagnostic laboratory	1980	2	F-29,595 S- 9,865		20
	ARKANSAS						
88-309	2-317-R.	Determine the feasibility of commercial fish production in sewage oxidation lagoons	1977	3	F- 9,525 S- 3,175	1981	32
	2-371-R.	Commercial fishery survey	1980	3	F- 63,750 S- 21,250		24
	CALIFORNIA						
88-309	4-42-S.	Program coordination	1979	2	F- 30,576 S- 10,192	1981	21
	4-43-R.	Shellfish culture investigations	1979	2	F-206,948 S- 68,983	1981	19
	4-44-D.	Fisheries monitoring, assessment, and evaluation	1979	2	F-307,154 S-102,385	1981	32
	4-45-D.	Demersal nearshore commercial invertebrate evaluation	1979	2	F-137,189 S- 45,730	1981	32
	4-48-R.	Morpho-physiological fertilization study of white and green sturgeon	1980	2	F- 19,000 S- 6,334		19
	4-50-S.	Program coordination	1981	1	F- 17,306 S- 5,769		21
	4-51-R.	Shellfish culture investigations	1981	1	F-122,048 S- 40,683		19

Public Law	Project number	Project number and title	Date initiated	Duration	Estimated total cost	Date completed	Project narrative
			Year	Years	Dollars	Year	Page
	4-52-D.	Fisheries monitoring, assessment and evaluation	1981	1	F-152,374 S- 50,791		32
	4-53-D.	Demersal nearshore commercial invertebrate evaluation	1981	1	F- 92,718 S- 30,906		32
89-304	AFC-12.	Ocean salmon study	1979	2	F-170,361 S-170,361	1981	29
	AFCS-15.	Mad River hatchery operations	1979	2	F-259,045 S-259,045	1981	23
	AFC-15.	Operation and maintenance of fish screens	1979	2	F-192,625 S-192,625	1981	23
	AFC-16.	Salmon and steelhead research, management and enhancement	1981	1	F-316,652 S-316,652		29
	COLORADO						
88-309	1-133-R.	Intensification of commercial fish culture	1977	4	F-123,000 S- 41,000		19
	1-161-R.	Baitfishes of Colorado	1981	1	F- 3,469 S- 6,938		24
	CONNECTICUT						
88-309	3-278-R.	Commercial fishery monitoring program	1977	4	F- 83,470 S- 27,823		36
89-304	AFS-4-R.	Connecticut River basin anadromous fish studies	1980	2	F- 92,000 S- 46,000 (includes FWS share)		27
	AFC-13.	Population dynamics of American shad in the Connecticut River	1981	4	F- 78,000 S- 78,000		27
	DELAWARE						
88-309	3-280-D.	Technical assistance to commercial fisheries	1977	5	F-196,000 S- 65,333		22
	FLORIDA						
88-309	2-336-D.	Fisheries extension and marketing services program	1978	5	F-819,732 S-273,245		22
	2-341-R.	Florida's marine resources research, development, and management program	1978	5	F-635,200 S-211,733		32
	2-370-D.	Oyster cultivation by reef construction	1980	3	F- 74,125 S- 24,708		34
	GEORGIA						
88-309	2-319-R.	Studies and assessment of Georgia's fishery resources	1977	4	F-319,280 S-106,427		35
88-304	AFC-18.	Georgia commercial shad assessment	1980	2	F- 38,161 S- 38,161		27
	GUAM						
88-309	4-42-D.	Development of polyculture fish farming under tropical conditions	1979	1	F- 31,000 S- 31,944		19

Public Law	Project number and title		Date initiated	Duration	Estimated total cost	Date completed	Project narrative
			Year	Years	Dollars	Year	Page
	HAWAII						
88-309	4-40-D.	Development of finfish aquaculture industry	1978	3	F- 90,000 S- 90,000		19
	IDAHO						
88-309	1-143-R.	Test rearing of anadromous fish	1978	3	F-251,250 S- 83,750	1981	29
	1-160-R.	Commercial fishery feasibility and development	1981	3	F- 66,372 S- 22,128		25
	ILLINOIS						
88-309	3-291-R.	Identification of factors responsible for the decrease in production of fish food organisms in the Illinois and Mississippi rivers	1978	3	F- 57,000 S- 19,215		24
	3-327-R.	Effects of three commercial harvesting methods on mussel beds	1979	3	F- 61,595 S- 21,331		34
	INDIANA						
88-309	3-336-R.	Movement of yellow perch in Indiana waters of Lake Michigan	1980	3	F- 75,000 S- 74,728		25
	IOWA						
88-309	2-350-R.	Wing dam investigations	1979	4	F-108,116 S- 36,039		24
	KANSAS						
88-309	2-340-R.	Marketable fisheries investigations	1978	3	F-115,015 S- 38,339		25
	2-378-R.	Freshwater mussel investigations	1981	1	F- 4,300 S- 1,433		34
	KENTUCKY						
88-309	2-358-R.	The effect of controlled harvest on some biological characteristics of smallmouth buffalo in Rough River Lake, Kentucky	1979	2	F- 18,984 S- 6,328	1981	25
	2-367-R.	Commercial mussel and asiatic clam fishery evaluation	1980	2	F- 18,267 S- 6,089		34
	2-368-R.	Commercial fishery evaluation	1980	2	F- 12,015 S- 4,005		25
	LOUISIANA						
88-309	2-342-R.	A study of areal and seasonal availability of the American eel (Anguilla rostrata) in southeastern coastal Louisiana	1979	3	F-146,250 S- 48,750	1981	32
	2-343-R.	An evaluation of gill nets of various mesh sizes	1979	2	F-156,079 S- 52,026		32

Public Law	Project number and title		Date initiated	Duration	Estimated total cost	Date completed	Project narrative
			Year	Years	Dollars	Year	Page
	2-353-D.	Permanent monument for oyster lease surveying	1979	4	F-450,000 S-150,000		34
	2-354-C.	Coordination and data processing for Louisiana's Federal aid program	1979	4	F-150,000 S- 50,000		21
	2-364-R.	A study of Gulf menhaden in Louisiana	1980	2	F-112,500 S- 37,500		32
	MAINE						
88-309	3-300-R.	Lobster stock assessment	1978	4	F-248,580 S-248,580		34
	3-304-D.	Market and economic development	1979	3	F-120,000 S-120,000		23
	3-305-D.	Marine resources fisheries extension	1979	4	F- 81,500 S- 81,500		22
	3-315-S.	Coordination of research and development	1979	3	F-186,776 S- 62,259		21
	3-329-D.	Operation and maintenance of marine laboratory	1979	3	F- 35,142 S- 35,143		23
	3-330-R.	Shrimp stock assessment	1979	1	F- 2,185 S- 2,185		34
	3-341-R.	Environmental physiology of northern shrimp (Pandalus borealis)	1980	2	F- 7,110 S- 7,110		34
	3-348-R.	Clam flat pollution abatement	1981	3	F- 49,650 S- 49,650		33
89-304	AFC-20.	American shad enhancement and status of sturgeon stocks in Maine waters	1979	3	F- 76,500 S- 76,500		27
	AFC-21.	Population biology and management of the alewife (Alosa pseudoharengus) in Maine	1979	3	F- 72,084 S- 72,084		26
	MARYLAND						
88-309	3-310-R.	Marine animal disease investigations	1979	3	F- 89,637 S- 29,879		22
	3-325-D.	Maryland seafood marketing	1979	3	F- 90,637 S- 90,366		23
	3-326-D.	Maryland fisheries extension	1979	3	F-132,561 S- 44,187		22
	3-345-D.	Maryland fisheries statistics	1980	5	F-554,217 S-554,217		36
89-304	AFC-10.	Survey and inventory of anadromous fish spawning areas	1980	3	F-204,900 S-204,900		32
	AFC-11.	Striped bass research, Maryland (Emergency Striped Bass Research Study)	1980	2	F-206,615 S-104,036		31

Public Law	Project number and title		Date initiated	Duration	Estimated total cost	Date completed	Project narrative
			Year	Years	Dollars	Year	Page
	MASSACHUSETTS						
88-309	3-194-D.	Collection, compilation, evaluation, and dissemination of commercial fisheries statistics	1973	7	F-290,717 S-101,757		36
	3-218-C.	Construction of marine research station	1974	10	F-250,000		20
	3-287-R.	Coastwide fishery resource assessment	1978	5	F-507,750 S-169,250		32
	3-288-D.	Shellfish technical assistance and management planning	1978	5	F-288,187 S- 96,062		22
	3-294-D.	Commercial fisheries extension service	1978	5	F-327,193 S-158,978		23
	3-303-D.	Massachusetts fisheries marketing program	1978	5	F-285,000 S- 95,000		23
	3-322-D.	Anadromous fisheries development	1979	2	F-108,000 S-108,000		20
89-304	AFS-4-R.	Connecticut River basin anadromous fish studies	1980	2	F-185,800 S- 92,900 (includes FWS share)		27
	AFCS-17.	Anadromous fish hatching and rearing station	1979	2	F-107,860 S-107,860	1981	20
	AFCS-18.	Characterization of Massachusetts commercial striped bass landings	1981	2	F- 36,466 S- 18,234		31
	AFC-19.	Anadromous fisheries management	1981	5	F-349,600 S-349,600		20
	MICHIGAN						
88-309	3-349-R.	Lake Michigan lake trout study	1981	1	F- 63,000 S- 21,000		25
89-304	AFC-14.	Lake Erie walleye assessment	1980	3	F-147,122 S-147,122		25
	MINNESOTA						
88-309	3-316-R.	Leech culture study	1979	3	F- 35,700 S- 35,700		19
	3-344-R.	Lake Superior commercial fisheries assessment studies	1981	4	F- 51,300 S- 17,100		26
	MISSISSIPPI						
88-309	2-296-R.	Fishery monitoring and assessment	1977	3	F-384,810 S-128,270		32
	2-325.R.	Commercial fishes of Mississippi: spawning and miscellaneous biological factors	1978	3	F-158,070 S- 53,692		32
	2-327-R.	Selection of improved commercial traits in channel catfish	1978	4	F- 44,000 S- 14,667		19

Public Law	Project number and title		Date initiated	Duration	Estimated total cost	Date completed	Project narrative
			Year	Years	Dollars	Year	Page
	2-376-R.	Experimental treatment of catfish ponds with algal inhibitors	1981	3	F-100,000 S- 33,334		19
89-304	AFCS-7.	Striped bass restoration program-Mississippi Gulf Coast	1979	3	F-144,000 S-144,000 (includes FWS share)		31
	MISSOURI						
88-309	2-363-R.	Research and management of Missouri's commercial fisheries resources	1979	5	F-124,875 S- 41,625		36
	MONTANA						
88-309	1-123-R.	Establishment of aquatic baseline in large inland impoundment	1976	5	F-157,382 S- 45,665		26
	NEBRASKA						
88-309	2-257-R.	Population dynamics of the commercial fishery resources of the unchannelized and stabilized Missouri River	1975	5	F- 89,981 S- 29,994	1981	26
	2-359-R.	Population estimates of Missouri River fishes	1979	3	F- 63,375 S- 21,125		36
	2-360-R.	Inland commercial fisheries investigations	1979	3	F- 28,425 S- 9,475		36
	NEVADA						
88-309	4-41-D.	Rearing baitfish in western Nevada	1978	4	F- 85,970 S- 28,657		19
	NEW HAMPSHIRE						
88-309	3-343-D.	Statistical data acquisition program for the marine fisheries of New Hampshire	1980	3	F- 77,250 S- 25,750		37
	3-350-R.	An investigation of commercially important fisheries in New Hampshire coastal estuarine waters	1981	1	F- 28,875 S- 9,625		33
	3-351-R.	A comprehensive living marine resource strategy	1981	1	F- 38,221 S- 12,740		24
89-304	AFC-5	Operation and maintenance of the Milford hatchery	1980	3	F-240,000 S-240,000		23
	NEW JERSEY						
88-309	3-290-R.	Oyster drill control by hydraulic dredging in Delaware Bay	1978	3	F-179,713 S- 59,904		35
	3-319-R.	The effects of MSX disease on oyster production in Delaware Bay	1979	3	F- 72,000 S- 24,000		22

Public Law	Project number and title		Date initiated	Duration	Estimated total cost	Date completed	Project narrative
			Year	Years	Dollars	Year	Page
	3-332-R.	Inventory of New Jersey's estuarine shellfish resources	1979	5	F-192,072 S-192,072		35
	3-338-C.	Shellfish research vessel acquisition	1980	1	F- 25,000 S- 25,000		21
	3-340-D.	Marine fisherman's coordination project	1980	4	F-112,500 S- 37,500		23
	3-342-R.	Monitoring environmental quality of previously studied estuarine systems	1980	3	F- 80,750 S- 40,250		24
	3-353-D.	Commercial fisheries data collection	1981	1	F- 15,000 S- 5,000		37
	3-354-D.	Management of commercial fishery for blue crabs	1981	1	F- 10,125 S- 3,375		34
89-304	AFC-3.	Status of the striped bass population in New Jersey (Emergency Striped Bass Research Study)	1980	1	F- 42,333 S- 21,167		31
	AFC-4.	Monitoring of the status of the Striped Bass population in New Jersey II (Emergency Striped Bass Research Study)	1981	2	F- 76,000 S- 38,000		31
	NEW MEXICO						
88-309	2-366-R.	Intensive harvest of commercial species	1980	4	F- 90,000 S- 30,000		26
	NEW YORK						
88-309	3-293-S.	Coordination	1978	3	F- 66,525 S- 22,175		21
	3-307-D.	Shellfish transplant in the marine district of New York State #3	1979	3	F-156,000 S-156,000		35
	3-308-D.	Operation of mobile laboratories for shellfish sanitation control #2	1979	3	F- 81,050 S- 81,050		36
	3-309-R.	Assessment of New York's shellfish resources	1979	3	F- 87,900 S- 87,900		36
	3-312-R.	Black sea bass retention and escapement in vented and unvented pots	1979	2	F- 10,450 S- 10,450		27
	3-333-R.	Movement, mortality rates and growth of the American lobster	1980	2	F- 37,600 S- 37,600		34
	3-346-S.	Coordination III	1981	3	F- 60,200 S- 68,800		21
	3-347-C.	Marine research vessel acquisition	1981	1	F- 44,000 S- 44,000		21

Public Law		Project number and title	Date initiated	Duration	Estimated total cost	Date completed	Project narrative
			Year	Years	Dollars	Year	Page
89-304	AFC-10.	A study of the striped bass in the marine district of New York State #3	1979	3	F- 99,580 S- 99,580		31
	AFC-11.	Biology and management of striped bass in New York waters (Emergency Striped Bass Research Study)	1980	2	F-186,000 S- 93,000		31
	NORTH CAROLINA						
88-309	2-372-R.	North Carolina estuarine finfish management program	1980	3	F-306,396 S-102,132		27
89-304	AFCS-16.	North Carolina anadromous fisheries management program	1979	3	F-362,650 S-362,650 (Includes FWS share)		33
	AFC-17.	River herring spawning and water quality in Chowan River	1980	3	F- 37,500 S- 37,500		26
	AFC-18.	An investigation of size, age and sex of North Carolina striped bass (Emergency Striped Bass Research Study)	1980	3	F- 79,334 S- 39,666		31
	NORTH DAKOTA						
88-309	1-146-R.	The biology of Diplostomum spathaceum (eye flukes) and its relationship to fishes of commercial value	1979	3	F- 22,500 S- 7,500		22
	1-147-R.	Jamestown reservoir commercial fishery investigations	1979	2	F- 10,875 S- 3,625		25
	OHIO						
88-309	3-298-R.	Yellow perch parasite research	1978	4	F- 73,925 S- 24,642		22
	3-301-R.	Commercial fishing: gear mortality	1978	4	F-171,765 S- 75,835		26
	3-318-R.	Management of Muskingum River mussel population	1979	2	F- 88,419 S- 29,473		34
	OKLAHOMA						
88-309	2-301-R.	Commercial fishery statistics #2	1977	4	F- 8,640 S- 2,820	198.	37
	2-302-R.	Flathead catfish study	1977	4	F- 74,252 S- 24,751	1981	25
	2-337-R.	Commercial lake monitoring study	1978	4	F- 20,705 S- 8,235	1981	26

Public Law	Project number and title		Date initiated	Duration	Estimated total cost	Date completed	Project narrative
			Year	Years	Dollars	Year	Page
	OREGON						
88-309	1-150-R.	Commercial clam production	1979	2	F- 69,925 S- 20,995		33
	1-151-R.	Groundfish and shrimp assessment	1979	3	F-402,360 S-134,120		33
89-304	AFC-92.	Chinook salmon maturity evaluation	1978	3	F- 50,450 S- 50,450		29
	AFC-98.	Infectious disease program for salmon and steelhead trout hatcheries	1980	3	F-115,615 S-115,615		22
	AFC-99.	Management of the troll salmon fishery	1980	3	F-116,335 S-116,335		29
	AFC-100.	Identification of salmon stocks in Oregon	1980	3	F-165,832 S-165,832		29
	AFC-102.	Research and development of Oregon's coastal fish stocks	1980	3	F-651,500 S-651,500		29
	AFC-111.	Regional Mark Processing Center	1981	2	F-165,000 S- 82,500		29
	AFC-112.	Stock assessment and genetic studies of anadromous fish	1981	1	F- 62,480 S- 62,480		29
	AFC-113.	Joint Oregon-Washington multijurisdictional salmon management program	1981	1	F-278,530 S-139,265		29
	AFC-117.	Assessment of the ocean distribution and contribution of northern California and southern Oregon fall chinook stocks	1981	2	F- 65,936 S- 65,936		21
	PENNSYLVANIA						
88-309	3-272-C.	Construction of wet lab-Benner Spring research station	1976	5	F- 50,000 S-150,000		21
	3-337-R.	Guidelines for effective management of commercial fish hatchery wastewater treatment systems	1980	5	F-235,511 S- 78,504		24
	3-339-R.	Lake Erie commercial fishery investigations	1980	3	F-167,031 S- 55,677		26
	PUERTO RICO						
88-309	2-331-R.	Commercial fisheries statistics	1978	4	F-413,500 S-137,833		37
	2-332-R.	Maintenance and operation of the commercial fisheries laboratory	1978	4	F-156,000 S-156,000		23

Public Law	Project number	Project title	Date initiated	Duration	Estimated total cost	Date completed	Project narrative
			Year	Years	Dollars	Year	Page
	2-333-R.	Monitoring and assessment of Puerto Rico's commercial fisheries	1978	4	F-532,000 S-177,333		33
	2-356-C.	Coordination and administration	1979	4	F-120,000 S- 40,000		21
	2-374-R.	Pilot project for culture of agar producing algae in Puerto Rico	1981	1	F- 50,000 S- 16,667		33
	2-377-R.	Feasibility of hatchery culture of queen conch, Strombus gigas in Puerto Rico	1980	1	F- 26,250 S- 8,750		33
	RHODE ISLAND						
88-309	3-302-D.	Lobster logbook and statistical analysis	1978	4	F- 63,897 S- 63,897		37
	3-313-R.	Coastal fishery resource assessment	1979	3	F- 80,250 S- 26,750		33
89-304	AFC-2.	Fish ladder construction	1974	8	F- 89,967 S- 89,967		20
	AFC-4.	Striped bass stock assessment in Rhode Island waters (Emergency Striped Bass Research Study)	1981	2	F- 40,000 S- 20,000		31
	SOUTH CAROLINA						
88-309	2-357-R.	South Carolina fisheries statistics program (FY 1980-81-82)	1979	3	F-127,325 S- 42,442		37
89-304	AFC-8.	Monitoring and assessment of the S.C. commercial fishery for shad (FY 1980-81)	1979	3	F-118,300 S-118,300		27
	SOUTH DAKOTA						
88-309	1-155-R	Commercial production of food fishes in S.D. ponds	1980	2	F- 36,000 S- 12,000		19
	TENNESSEE						
88-309	2-347-R.	Hormonal control of reproduction in fishes	1979	3	F- 35,300 S- 11,766		19
	2-373-R.	Mussel resources survey	1980	4	F- 75,000 S- 25,000		34
	TEXAS						
88-309	2-310-R.	Finfish harvesting studies in Texas estuaries	1977	4	F-682,287 S-227,429	1981	37
	2-311-R.	Commercial fisheries catch statistics	1977	4	F-109,130 S- 36,377	1981	37

Public Law	Project number and title		Date initiated	Duration	Estimated total cost	Date completed	Project narrative
			Year	Years	Dollars	Year	Page
	2-312-R.	Shrimp and finfish investigations in the northwest Gulf	1977	4	F-231,062 S- 77,021	1981	36
	2-328-R.	Studies of shrimp populations in selected coastal bays of Texas	1978		F-312,405 S-104,134	1981	35
	UTAH						
88-309	1-149-R.	Physiological/genetic studies of trout strains in commercial and agency hatcheries	1979	2	F- 71,800 S- 28,945		22
	1-156-R.	Potential of Utah chub to support a bait fish industry	1980	3	F- 31,037 S- 10,980		24
	VERMONT						
88-309	3-241-D.	Commercial potential of Vermont fisheries resources	1975	5	F-137,295 S- 91,113		26
	VIRGIN ISLANDS						
88-309	2-335-R.	Commercial fisheries research and development in the U.S. Virgin Islands	1978	5	F-125,205 S- 41,735		33
	VIRGINIA						
88-309	3-265-R.	Present and potential productivity of Baylor Grounds	1976	4	F-180,969 S-180,969	1981	34
	3-314-D.	Development of oyster resources	1979	3	F-150,000 S-150,000		35
	3-321-D.	Fisheries profiles and plans	1979	3	F-228,153 S- 76,051		24
	3-334-D.	Virginia seafood market development	1980	2	F- 60,000 S- 20,000		23
	3-335-D.	Commercial finfish and shellfish statistical collection	1980	2	F- 92,770 S- 30,923		37
89-304	AFC-10.	Anadromous fisheries research program, Virginia	1979	3	F-311,805 S-311,805		27
	AFC-11.	Assessment of larval striped bass stocks in Virginia waters (Emergency Striped Bass Research Study)	1980	3	F-226,766 S-113,383		31
	AFC-12.	Striped bass research, Virginia (Emergency Striped Bass Research Study)	1980	2	F-177,800 S- 88,900		31
	WASHINGTON						
88-309	1-127-R.	Marina criteria revision study	1976	5	F-215,380 S- 71,793	1981	24

Public Law	Project number and title		Date initiated	Duration	Estimated total cost	Date completed	Project narrative
			Year	Years	Dollars	Year	Page
	1-134-R.	Marine fish coastal fisheries analysis	1977	4	F- 68,435 S- 22,812	1981	21
	1-135-R.	Coastal dungeness crab project	1977	5	F-151,812 S- 50,605		34
	1-136-R.	Pacific cod, lingcod, rockfish assessment	1977	5	F-163,352 S- 54,452		28
	1-142-R.	Improved techniques for use with domestic oysters	1978	3	F- 60,254 S- 20,085	1981	35
	1-144-R.	Shellfish enhancement project	1979	3	F-205,069 S- 68,356		20
	1-145-R.	Pacific cod, lingcod, and rockfish age determination	1979	3	F- 40,022 S- 13,341	1981	28
	1-152-R.	South coast marine fish/ shellfish monitoring	1979	3	F- 57,750 S- 19,250	1981	36
	1-153-R.	Juan de Fuca herring surveys	1979	1	F- 45,000 S- 15,000	1981	27
	1-154-R.	Coastal pink shrimp study	1979	4	F- 39,181 S- 13,061		35
	1-158-R.	Japanese literature review	1980	2	F- 15,875 S- 5,295		23
	1-159-R.	Coastal groundfish age determination	1981	3	F-103,000 S- 34,351		28
89-304	AFC-84.	Development of a spawning gravel cleaning machine	1977	4	F-137,315 S-137,315		30
	AFC-86.	Hood Canal salmon studies	1977	3	F- 46,435 S- 46,435	1981	30
	AFC-90.	Washington ocean salmon comprehensive sampling program	1978	5	F-242,500 S-242,500		30
	AFCS-95.	Hoh River salmon enhancement	1978	3	F- 95,517 S- 95,517	1981	20
	AFC-97.	Big Beef Creek chum production assessment	1980	3	F-149,310 S-149,310		30
	AFCS-101.	Stillaguamish River chum restoration	1979	2	F- 65,138 S- 69,767	1981	20
	AFCS-103.	Freshwater salmon production evaluation	1979	5	F-276,880 S-276,880	1981	30
	AFCS-104.	Development of Cedar River sockeye and chinook enhancement facility	1979	3	F-1,255,000 S-1,362,000 (Includes FWS share)		20

Public Law	Project number	Project title	Date initiated	Duration	Estimated total cost	Date completed	Project narrative
			Year	Years	Dollars	Year	Page
	AFCS-105.	Lummi Indian chum hatchery	1980	1	F- 48,500 S- 48,500 (Includes FWS share)	1981	20
	AFC-107.	Skagit River spring chinook radio-tracking study	1981	1	F- 19,092 S- 19,092		30
	AFC-109.	Nooksack River spring chinook radio-tracking study	1981	1	F- 16,000 S- 16,000		30
	AFC-110.	Salmon-herring predator/ competitor interactions	1981	1	F- 19,985 S- 19,985		30
	AFC-114.	Joint Washington Oregon multijurisdictional salmon management program	1981	1	F-394,360 S-197,180		30
	AFC-115.	Lake Washington simulation model	1981	1	F- 31,390 S- 31,390		30
	AFC-116.	Coastal commercial net sampling	1981	1	F- 16,000 S- 16,000		30
	WEST VIRGINIA						
88-309	3-273-R.	Commercial fishery investigations	1976	6	F- 40,500 S- 13,500		26
	3-311-R.	Ohio River commercial bait minnow investigations	1979	3	F- 37,500 S- 12,500		25
	WISCONSIN						
88-309	3-299-R.	Quota-controlled chub fishery for Wisconsin waters of Lake Michigan	1978	4	F- 87,515 S- 29,171		26
89-304	AFC-15.	Rehabilitation of Green Bay walleye fishery	1979	3	F- 97,500 S- 97,500		25
	WYOMING						
88-309	1-129-R.	Dynamics and commercial potential of sucker populations in western impoundments	1977	4	F- 76,000 S- 25,333		26

PROGRAM ANALYSIS

For program analysis, projects are grouped under the type of activity undertaken rather than by State or Public Law. In doing so, the reader has all projects for the 1981 segment of the program, such as construction, coordination, or research, in one section.

Under each type of activity included are project identification, principal investigator, 1981 project segment cost, State and Federal. If projects were continued or completed in 1981 with prior year funds, no cost is indicated below.

Request for additional information about a project or for reprints of reports resulting from the work should be made to the appropriate NMFS Regional Office, State agency, or Cooperator. The Regional Offices, State agencies, and Cooperators, including addresses, are listed on pages 38-41.

AQUACULTURE

California 4-43-R — Earl E. Ebert — Completed 1981

Shellfish culture investigations - Develop mass culture techniques for dungeness crab, pismo clam, and red abalone.

California 4-48-R — Wallis H. Clark, Jr. — F- 19,000 S- 6,334

Morpho-physiological fertilization - Study of white and green sturgeon. Develop basic information on fertilization and early development of white and green sturgeon.

California 4-51-R — Earl E. Ebert — F-122,048 S- 40,683

Shellfish culture investigations - Develop mass culture techniques for dungeness crab, pismo clam, and red abalone.

Colorado 1-133-R — Stephen A. Flickinger — F- 28,218 S- 10,168

Intensification of commercial fish culture - Culture freshwater bass with use of grass carp to control aquatic vegetation.

Guam 4-42-D — Harry Kami — F- 29,300 S- 26,665

Development of polyculture fish farming under tropical conditions - Increase production of prawns and other species on island for domestic and export markets.

Hawaii 4-40-D — Takuji Fujimura — F- 0 S- 0

Development of finfish aquaculture industry - Improve techniques for mass production of channel catfish fingerlings.

Minnesota 3-316-R — Floyd A. Hennagir — F- 7,612 S- 16,188

Leech culture study - Develop pond culture techniques for the leech, Nephelopsis obscura, to enable live bait dealers to rear this species.

Mississippi 2-327-R — Roland E. Reagan, Jr. — F- 11,000 S- 3,666

Selection of improved commercial traits in channel catfish - Select a crossbred domestic strain of channel catfish for rapid gain, fat content, and dress-out percentage.

Mississippi 2-376-R — George Passokey — F- 40,000 S- 13,334

Experimental treatment of catfish ponds with algal inhibitors - Evaluate the abundance and diversity of algae with off-flavor problems of commercially grown freshwater catfish.

Nevada 4-41-D — Robert E. L. Taylor — F- 29,300 S- 9,767

Rearing baitfish in western Nevada - Determine supply and demand for baitfish used in western Nevada and develop techniques for culture of minnows.

South Dakota 1-155-R — Charles Scalet — F- 32,306 S- 10,769

Commercial Production of food fishes in South Dakota ponds - Determine the feasibility of culturing annual crops of channel catfish and rainbow trout in eastern South Dakota dugouts.

Tennessee 2-347-R — Bill A. Simco — F- 15,000 S- 5,000

Hormonal control of reproduction in fishes - Correlate annual pituitary cell activity with gonadal state and determine if injections of pituitary hormones can stimulate maturation of gonads in channel catfish independent of season.

Washington 1-144-R — Ron Westley — F- 61,000 S- 20,334

Shellfish enhancement project - Develop techniques for culture of mussels and other shellfishes (scallops, shrimp, abalone) not commercially available in Washington State.

CONSTRUCTION

FISH SCREENS AND STREAM IMPROVEMENT FACILITIES

Massachusetts 3-322-D — Joseph DiCarlo — Completed 1981

Anadromous fisheries development - Construct, improve, and maintain fish passage facilities in selected coastal watersheds. Also, transplant prespawning adult shad and alewives to locations where new runs are being established or depleted runs augmented.

Massachusetts AFC-19 — Joseph D. Carlo — F- 53,036 S- 53,036

Anadromous fisheries management - Maintain and enhance existing populations, restore historically important populations and establish new populations of anadromous fish.

Rhode Island AFC-2 — John Stolgitis — F- 0 S- 0

Fish ladder construction - Construct fish passage facilities on Forge Road and Potowomut Pond Dams, Hunts River, and North Kingston-East Greenwich and Bradford Dam on the Pawcatuck River.

HATCHERIES AND HATCHERY FACILITIES

Massachusetts AFCS-17 — David S. Fredenburgh — Completed 1981

Anadromous fish hatching and rearing station - Increase hatchery production capabilities for coho salmon smolts and sea-run brown trout.

Washington AFCS-95 — Richard Mattson-Hoh Tribe — Completed 1981

Hoh River salmon enhancement - Construct a tribal chum salmon hatchery on lower Chaloot Creek to produce 4.5 million fry annually.

Washington AFCS-101 — Terry Martin-Stillaguamish Tribe — Completed 1981

Stillaguamish River chum restoration - Expand tribal incubation and rearing facility on Armstrong Creek to accommodate 500,000 native chum fry reared to 400/lb.

Washington AFCS-104 — Donald Bartlett — F-276,820 S-276,820

Development of Cedar River sockeye and chinook enhancement facility - Construct a hatchery, rearing station, fish ladder and caretaker's facilities on the Cedar River near Landsburg Dam.

Washington AFCS-105 — Steve Seymour — Completed 1981

Lummi Indian chum hatchery - Improve existing rearing pond and install NOPAD fish incubators at the Lummi hatchery.

LABORATORIES

Arizona 4-49-R — Eugene P. Sturla — F- 29,595 S- 9,865

Fish disease control station - diagnostic laboratory - Renovation and equipping an existing facility that will have the capabilities of providing complete diagnostic services to state, county, city, and commercial aquaculture interests.

Massachusetts 3-218-C — Arthur P. Chesmore — F- 0 S- 0

Construction of marine research station - Construct a marine research station which will provide central facilities for personnel now located at several temporary installations on Cape Cod.

Pennsylvania 3-272-C — Wibert F. Hobbs — F- 0, S- 0

Wet Lab - Benner Springs research station - Build a lab for research on fish diseases, propagation techniques, fish nutrition, and waste products.

VESSELS

New Jersey 3-338-C — Thomas McCloy — F- 25,000, S- 25,000

Shellfish research vessel acquisition - To acquire a 32-foot dredge boat for monitoring the New Jersey estuarine shellfish populations.

New York 3-347-C — Chester S. Zawacki — F- 25,000, S- 25,000

Marine Research Vessel Acquisition - Acquire a 35-foot research vessel for sampling New York's marine finfish and crustocean resources.

COORDINATION

Alaska 5-45-S — Gary Finger — F- 72,200, S- 24,100

Program coordination - Administration of Public Law 88-309 projects.

Alaska AFC-58 — Gary Finger — F- 57,700, S- 84,100

Program coordination - Administration of Public Law 89-304 projects.

California 4-42-S — Eugene Fleming — Completed 1981

Program coordination - Administration of Public Law 88-309 projects.

California 4-50-S — Eugene Fleming — F- 17,306, S- 5,769

Program coordination - Administration of Public Law 88-309 projects.

Louisiana 2-354-C — William S. Perret — F- 37,500, S- 12,500

Coordination and data processing for Louisiana's Federal aid program - Provide supervision and administration over all commercial fisheries research and development projects and provide electronic processing and analysis for research data collected on these projects.

Maine 3-315-S — Richard P. Choate — F- 76,411, S- 25,470

Coordination of research and development - Administer Maine's Public Law 88-309 program.

New York 3-293-S — Samuel L. Finkelstein — Completed 1981

Coordination - Administer Public Law 88-309 projects.

New York 3-346-S — Samuel L. Finkelstein — F- 18,200, S- 20,800

Coordination III - Administer Public Law 88-309 projects.

Puerto Rico 2-356-C — Jose A. Suarez-Caabro — F- 34,500, S- 11,500

Coordination and administration - Administer Puerto Rico's Public Law 88-309 program.

Washington 1-134-R — Alan Millikan — Completed 1981

Marine fish coastal fisheries analysis -Coordinate WDF activities and participation in marine fisheries American-Canadian negotiations.

DISEASE AND PARASITE CONTROL

Maryland 3-310-R — Sara V. Otto — F- 47,547 S- 68,085

Marine animal disease investigations - Determine distribution and intensity of disease affecting several species of marine animals in Chesapeake Bay and its tributaries.

New Jersey 3-319-R — Harold H. Haskin — F- 24,000 S- 8,000

Effects of MSX disease on oyster production in Delaware Bay - Provide continuing information on the fluctuation, prevalence, and intensity of MSX disease in Delaware Bay and on resultant oyster stock mortalities.

North Dakota 1-146-R — Harry L. Hollaway — F- 7,500 S- 2,500

Biology of Diplostomum spathaceum (eye-flukes) and its relationship to fish of commercial value - Determine incidence and effects of eye flukes on North Dakota reservoir fish.

Ohio 3-298-R — John L. Crites — F- 23,615 S- 7,872

Yellow perch parasite research - Study impact of parasites upon growth and survival of yellow perch.

Oregon AFC-98 — John Conrad — F-120,698 S-120,698

Infectious disease program for salmon and steelhead hatcheries - Monitor fish condition and investigate epizootics to identify pathogens and prescribe control measures.

Utah 1-149-R — Charles Berry — F- 21,020 S- 7,470

Physiological/genetic studies of trout strains in commercial and agency hatcheries - Evaluate rainbow trout strains and rough fish for survival and disease resistance.

EXTENSION SERVICE

American Samoa 4-46-D — Henry Sesepasara — F- 9,800 S- 0

Fisheries technical assistance - Provide training and advisory services to local fishermen.

Delaware 3-280-D — Charles A. Lesser — F- 46,800 S- 15,599

Technical assistance to commercial fisheries - Provide technical assistance to commercial fishermen, seafood industries, and governmental authorities regarding the management, enforcement, and dissemination of data pertaining to commercial fisheries.

Florida 2-336-D — Sally S. Patrenos — F-200,178 S- 66,929

Fisheries extension and marketing services program - Initiated extension program designed to teach professional foods people the techniques of fish cookery; proper handling, storing, and preparing fish; and ways to maintain and expand consumer demand for fishery products.

Maine 3-305-D — Kenneth A. Honey — F- 36,428 S- 36,427

Maine resources fisheries extension - Provide technical expertise and assistance to fishery research and management programs, and assist the fishing industry in developing ways to harvest and process renewable marine resources.

Maryland 3-326-D — F. William Sieling III — F- 18,966 S- 46,452

Maryland fisheries extension - Disseminate scientific and technological information to the fishing industry and legislative officials, encourage the use of underutilized species of seafood in Maryland waters, and promote the planting of hatchery-reared seed oysters and hard clams.

Massachusetts 3-288-D — John M. Hickey — F- 39,927 S- 13,309

Shellfish technical assistance and management planning - Give the shellfish industry technical assistance in modern ways of culturing and harvesting important shellfish along the Massachusetts coast.

Massachusetts 3-294-D — Jay Wennemer — F- 25,412 S- 12,707

Commercial fisheries extension service - Provide all segments of the Massachusetts fishing industry with information an technical assistance.

New Jersey 3-340-D — William Figley — F- 64,125 S- 21,375

Marine fisherman's coordination project - Provide the mechanism for the efficient dissemination of new commercial fishing technology, legislation and regulations, and results of pertinent scientific investigations to the commercial fishing community and the general public.

Washington 1-158-R — R. E. Westley — F- 15,875 S- 5,295

Japanese literature review - Translate available knowledge on aquaculture.

MARKET DEVELOPMENT

Maine 3-304-D — Michael Moser — F- 40,000 S- 40,000

Market and economic development - Increase sales of underutilized species, expand existing markets, and inform consumers and institutional buyers regarding the harvesting, processing, availability, and nutritional value of seafood products.

Maryland 3-325-D — Gordon P. Hallock — F- 0 S- 0

Maryland seafood marketing - Alleviate supply and demand imbalances, assist the seafood industry in development of new products, assist in development of an automated oyster shucking machine, and encourage utilization of Maryland seafood by institutional mass feeders.

Massachusetts 3-303-D — Neil Murphy — F- 42,828 S- 14,276

Massachusetts fisheries marketing program - Increase production and consumption of quality Massachusetts seafood products, foster interest in underutilized species, and increase seafood industry participation and support of fisheries marketing program.

Virginia 3-334-D — J. Keith Porter — F- 0 S- 0

Virginia seafood market development - Educate and inform consumers and volume feeders about the availability, economy, and nutritional values of Virginia fishery products.

OPERATION AND MAINTENANCE

California AFSC-15 — Robert D. Will — Completed 1981

Mad River fish hatchery operations - Operate and maintain the Mad River fish hatchery to enhance north coastal fisheries for steelhead and salmon.

California AFC-15 — Jerome R. Staley — Completed 1981

Operation and maintenance of fish screens - Operate and maintain fish screens constructed under Public Law 89-304.

Maine 3-329-D — Kenneth Honey — F- 20,450 S- 20,449

Operation and maintenance of marine laboratory, West Boothbay Harbor Maine - Provide the manpower necessary for the physical operation of the laboratory building as well as effecting necessary repairs and maintenance.

New Hampshire AFC-5 — Charles F. Thoits III — F- 80,000 S- 80,000

Operation and maintenance of the Milford hatchery - Provide the personnel, feed, medication, and other activities necessary for the hatching and rearing to smolt size of approximately 500,000 anadromous salmonids.

Puerto Rico 2-332-R — Jose A. Suarez-Caabro — F- 57,500 S- 57,500

Maintenance and operation of the commercial fisheries laboratory - Maintain the Mayaguez commercial fisheries laboratory.

PLANNING

New Hampshire 3-351-R — Edward Spurr — F- 38,221 S- 12,740

A comprehensive marine resources strategy for the State of New Hampshire - Develop a comprehensive stategy to address commercial fisheries research and development requirements based on an analysis of the major problems and priorities affecting New Hampshire's fisheries.

Virginia 3-321-D — Daniel J. Lonergan — F- 39,453 S- 13,151

Fisheries profiles and plans - Assemble known biologic, economic, and sociologic data as they relate to the commercial fisheries on a species by species basis and implement a grid system mapping the subaqueous land of Virginia.

RESEARCH

ENVIRONMENT

Estuarine:

New Jersey 3-342-R — John F. McClain — F- 30,825 S- 10,275

Monitoring environmental quality of previously studied estuarine systems - Monitor environmental parameters of the Mullica-Great Bay and upper Barnegat Bay estuaries to determine whether the systems' quality is improving, declining, or remaining static.

Freshwater:

Illinois 3-291-R — Richard E. Sparks — F- 17,425 S- 5,808

Identification of factors responsible for the decreased production of fish food organisms in the Illinois and Mississippi rivers - Use fingernail clams to study the effects of ammonia on production of fish food organisms.

Iowa 2-350-R — Don Bohneay — F- 29,309 S- 9,767

Wing dam investigations - Develop a strategic plan to recommend construction and modification of wingdams compatible with fisheries integrity.

Pennsylvania 3-337-R — Delano R. Graff — F- 52,219 S- 17,406

Guidelines for effective management of commercial fish hatchery wastewater treatment systems - Evaluate different types of wastewater treatment systems to assist the commercial fish growers.

Washington 1-127-R — Rick D. Cardwell — Completed 1981

Marina criteria revision study - Obtain biological and water quality data for revision of criteria on marinas.

FINFISH (FRESHWATER)

Baitfish:

Arkansas 2-371-R — Scott Henderson — F- 18,750 S- 6,250

Commercial fishery survey - Gather data and compile information concerning the status of wild commercial fishery resource and evaluate regulations for commercial fishing.

Colorado 1-161-R — John Woodling — F- 3,469 S- 6,938

Baitfishes of Colorado - Prepare and publish a manual on identifying, rearing and using the baitfish resources of Colorado.

Utah 1-156-R — Charles Berry — F- 15,974 S- 5,325

Potential of the Utah chub to support a baitfish industry - Analyze the impact on fishery resources of the Utah chub and determine present and future demand in the baitfish industry in Utah.

West Virginia 3-311-R — Larry A. Neilson — F- 21,000 S- 11,382

Ohio River commercial bait minnow investigations - Determine commercial potential, economic feasibility, and harvest methodology for bait fisheries on the Ohio River.

Buffalo and carp:

Kentucky 2-358-R — James R. Axon — F- 9,859 S- 3,286

The effect of controlled harvest on some biological characteristics of smallmouth buffalo in Rough River Lake, Kentucky - Evaluate the influence of commercial harvest upon some biological characteristics of underutilized species.

North Dakota 1-147-R — John Owen — F- 6,750 S- 2,250

Jamestown reservoir commercial fishery investigations - Determine the commercial potential and harvesting techniques for carp, buffalo, white suckers, black bullhead, and yellow perch.

Catfish and bullhead:

Oklahoma 2-302-R — Charles R. Wallace — F- 17,770 S- 5,923

Flathead catfish study - Assess flathead catfish stocks and determine status as a commercial and sport species.

Lake trout:

Michigan 3-349-R — Myrl Keller — F- 54,300 S- 18,100

Lake Michigan lake trout study - Obtain data requirements for improved assessments of the lake trout fishery resource in Lake Michigan.

Walleye:

Michigan AFC-14 — Robert Haas — F- 35,014 S- 35,014

Lake Erie walleye assessment - To determine the distribution and harvest of walleye stocks in western Lake Erie.

Wisconsin AFC-15 — Lee Kernen — F- 32,500 S- 32,500

Rehabilitation of Green Bay walleye fishery - Evaluate success of stocked fingerling and fry walleyes and double the existing standing stock through planting and curtailment of harvest.

Yellow perch:

Indiana 3-336-R — Thomas S. McComish — F- 29,300 S- 32,405

Movements of yellow perch in Indiana waters of Lake Michigan - Determine, through tagging, seasonal distribution of yellow perch by size, age, sex, maturity, temperature and depth.

Others:

Idaho 1-160-R — David Ortmann — F- 22,124 S- 7,376

Commercial fishery feasibility and development - Determine the availability and quality of non-game fish species in the Snake River Basin.

Kansas 2-340-R — Robert Hartmann — F- 26,836 S- 8,945

Marketable fisheries investigations - Determine the biological effects of marketable fish harvest on fish communities in Kansas reservoirs, and recommend commercial fisheries management practices for Kansas reservoirs.

Kentucky 2-368-R — Donald W. Johnson — F- 8,158 S- 2,719

Commercial fishery evaluation - Determine population structure of species of fish, particularly paddlefish, that are affected by the use of commercial fishing gear.

Minnesota 2-344-R — John Spurrier — F- 17,100 S- 5,700

Lake Superior commercial fisheries assessment studies - Ascertain and monitor the status of lake trout and commercial fish stocks (lake herring, chubs, smelt) in the Minnesota waters of Lake Superior.

Montana 1-123-R — James E. Liebelt — Completed 1981

Establishment of aquatic baselines in large inland impoundment - Assess the commercial, game, and forage fish stocks and water quality in impoundment on Missouri River.

Nebraska 2-257-R — Mel Taylor — Completed 1981

Population dynamics of the commercial fishery resources of the unchannelized and stabilized Missouri River - Evaluate the population levels of several species to determine the level of exploitation to maintain viable fish populations.

New Mexico 2-366-R — Warren J. McNall — F- 12,500 S- 4,167

Intensive harvest of commercial species - Determine the effect of intensive harvest of white suckers on the fish populations in trout lakes.

Ohio 3-301-R — Michael R. Rawson — F- 40,740 S- 13,580

Commercial fishing: gear mortality - Determine the effects of season, area, catch size, and net time on immediate mortality of commercial gear net released fishes and develop management proposals.

Oklahoma 2-337-R — Harold Namminga — F- 5,578 S- 1,859

Commercial lake monitoring study - Monitor fish populations in lakes undergoing commercial harvest in Oklahoma.

Pennsylvania 3-339-R — Robert Kenyon — F- 42,933 S- 14,311

Lake Erie commercial fishery investigations - Investigate year class fluctuations and early life histories of yellow perch, smelt, drum, whitefish, and walleye.

Vermont 3-241-D — George W. LaBar — Completed 1980

Commercial potential of Vermont fisheries resources - Study the distribution and growth rates of cisco, and the home range and localized movements of eels in Lake Champlain and determine status of aquaculture and the baitfish industry in Vermont.

West Virginia 3-273-R — Fred Leckie — F- 6,750 S- 2,250

Commercial fishery investigations - Administer and monitor the Ohio River commercial fishery and determine levels of pesticides and complex chemical compounds in commercial fishes.

Wisconsin 3-299-R — Jim McNelly — F- 4,300 S- 1,433

Quota-controlled chub fishery for Wisconsin waters of Lake Michigan - Continue the State's chub assessment program to evaluate changes in the populations to determine allowable harvest.

Wyoming 1-129-R — John Baughman — F- 15,100 S- 5,033

Dynamics and commercial potential of sucker population in western impoundments - Use gill nets, trap nets, purse seines, and shore seines to collect suckers for analysis of age, growth rate, condition, and sexual maturity.

FINFISH (MARINE or ANADROMOUS)

Alewife and herring:

Maine AFC-21 — Clement J. Walton — F- 21,804 S- 21,804

Population biology and management of the alewife (Alosa pseudoharengus) in Maine - Determine population characteristics and monitor catch, escapement, and production levels of the Damariscotta River alewife stock.

North Carolina AFC-17 — Michael Street — F- 6,804 S- 6,804

River herring spawning and water quality in the Chowan River - Determine reproductive success of river herring and assess the influence of water quality changes in the Chowan River.

North Carolina 2-372-R — Scott G. Keith — F-106,668 S- 35,556

North Carolina estuarine finfish management program - Obtain biological data base on economically important fish stocks in all estuarine waters except Albermarle Sound and its tributaries.

Virginia AFC-10 — Joseph G. Loesch — F-127,201 S-127,201

Anadromous fisheries research program, Virginia - To collect catch and effort statistics from the Virginia river herring, American shad, and striped bass fisheries and determine indices of juvenile abundance to update the existing data base.

Washington 1-153-R — Robert Trumble — Completed 1981

Juan de Fuca herring surveys - Conduct stock assessment surveys in the Strait of Juan de Fuca utilizing hydro-acoustic techniques.

American shad:

Connecticut AFC-13 — Victor Crecco — F- 52,000 S- 52,000

Population dynamics of American shad in the Connecticut River - Determine levels of commercial fishing effort which furnish the highest sustainable yields and ensure an adequate spawning population; project the size of future spawning runs and gain insight into stock recruitment.

Georgia AFC-18 — Ronald J. Essig — F- 32,161 S- 32,161

Georgia commercial shad assessment - Quantify commercial shad landings, determine catch per unit effort and analyze data.

Maine AFC-20 — Thomas Squiers — F- 26,173 S- 26,173

American shad enhancement and status of sturgeon stocks in Maine waters - Study adult and juvenile American shad in Kennebec River and tributaries. Also observe size of shortnose sturgeon.

South Carolina AFC-8 — Glen F. Ulrich — F- 39,494 S- 39,494

Monitoring and assessment of the South Carolina commercial fishery for shad (FY 1980-1981) - Develop catch effort indices of abundance for American shad in major river systems; monitor age, sex, and size composition; collect statistics on landings; and do feasibility study of ocean sampling and tagging.

Atlantic salmon:

Connecticut AFS-4-R — James Moulton — F- 39,000 S- 19,500 (includes FWS share)

Connecticut River basin anadromous fish studies - Modernize and equip the Kensington Hatchery to adequately provide for the rejuvenation of Atlantic Salmon and rearing of fry and smolts.

Massachusetts AFS-4-R — Peter Oatis — F- 80,000 S- 40,000 (includes FWS share)

Connecticut River basin anadromous fish studies - Construct hatching and rearing facilities at the Roger Reed Hatchery to provide adequate space for rearing of smolts, kelt reconditioning, and holding of adult Atlantic salmon prior to spawning.

Black sea bass:

New York 3-312-R — Alice Webber — Completed 1981

Black sea bass retention and escapement in vented and unvented pots - Determine the sizes, numbers, and ex-vessel value of black sea bass that escape and that are retained by pots in the pot fishery off Long Island.

Groundfish:

Alaska 5-49-R — Phil Ribgy — F- 52,100 S- 39,800

Gulf Alaska - Bering Sea groundfish investigations - Collect landing data for groundfish caught off of Alaska. Data are recorded on fish tickets which are edited to provide increased reporting accuracy of vessels, catch areas, and species composition, to gain better knowledge of the fisheries and status of stocks.

Washington 1-136-R — Jack Tagart — F- 38,097 S- 12,699

Pacific cod, lingcod, rockfish assessment - Collect and analyze stock assessment data from port samplers, fishermen's log books and research cruises for implementing and monitoring the Pacific Fishery Management Council groundfish management plan.

Washington 1-145-R — Mark Pedersen — Completed 1981

Pacific cod, lingcod, rockfish age determination - Collect information for stock assessment and management data base.

Washington 1-159-R — Mark Pedersen — F- 28,056 S- 9,352

Coastal groundfish age determination - Collect information for groundfish management plan data base.

Pacific salmon:

Alaska 5-43-R — John Edgington — F- 86,400 S- 28,900

Assessment of stream habitat and upland development - SE. Alaska - Study salmon stocks and physical characteristics in land use activities with emphasis on streams where logging is planned.

Alaska AFC-57 — Robert L. Burgner — F- 16,800 S- 16,800

Chignik sockeye studies - Determine age of returning Chignik sockeye salmon.

Alaska AFC-59 — Alan P. Kingsbury — F- 40,000 S-221,200

Pink salmon stock prediction - SE. Alaska - Develop techniques and background data for forecast of pink salmon runs for fishery managers, the fishing industry, and fishermen.

Alaska AFC-60 — Fred Bergander — F- 44,300 S- 56,500

Sockeye stock assessment and evaluation, SE. Alaska - Evaluate stock assessments and develop a means of estimating optimum escapements.

Alaska AFC-61 — Kenneth Roberson — F- 55,200 S- 55,200

Copper River - Prince William Sound sockeye salmon catalog and inventory - Evaluate commercial and subsistence catch data, and gather biological data on the salmon runs.

Alaska AFC-62 — Kenneth E. Tarbox — F- 93,000 S-143,300

Cook Inlet sockeye salmon studies - Assess the productivity of sockeye-rearing lakes and determine potential site for future rehabilitation or ehnancement projects to increase sockeye salmon stocks within Cook Inlet.

Alaska AFC-63 — Larry Buklis — F- 52,400 S-201,900

Yukon River salmon studies - Determine magnitude of salmon escapement, distribution, and extent of spawning areas with emphasis on king and chum salmon.

Alaska AFC-64 — Leonard Schwarz — F- 27,100 S- 45,100

Norton Sound - Kotzebue salmon studies - Determine the selectivity of set gill net mesh sizes on salmon species, age, sex, and length.

Alaska AFC-65 — Donald E. Rogers — F- 24,090 S- 48,780

Chignik sockeye studies - Conduct studies of in season separation of Chignik Lake and Black Lake sockeye salmon stocks.

Alaska AFC-66 — Scott Marshall — F- 80,000 S- 80,000

Origin of chinook salmon in the SE. Alaska troll fishery - Determine the origin of the major component stocks of chinook salmon contributing to the Alaska troll fishery.

Alaska AFC-67 — Phillip Gray — F-100,000 S-180,900

Microwire tagging of wild coho salmon stocks, SE. Alaska - Determine escapement and contribution to the fishery for each respective coho salmon stock.

Alaska AFC-68 — Scott Marshall — F- 40,000 S- 50,000

Copper River-Bering River sockeye salmon stock separation - Provide a data base for the management of the Copper River-Bering River commercial mixed stock fishery by component stocks.

AFC-69 — Charles P. Meacham — F- 90,000 S-167,800

Bristol Bay salmon run forecasts - Prepare preseason forecasts of total salmon run size by age, class, and river system; estimate potentially available harvest surplus for each of the commercial fishing districts, and make this information available to the fishing industry.

California AFC-12 — Patrick O'Brien — Completed 1981

Ocean salmon study - Collect landing data on commercial and recreational salmon fisheries. Evaluate effects of management programs on the ocean salmon fisheries.

California AFC-16 — A.C. Knutson, Jr. — F-316,652 S-316,652

Salmon and steelhead research, management and enhancement - 1) Determine numbers and pounds of commercial salmon landings and the contribution of marked or hatchery reared fish to the fishery. 2) Determine the spawning stock size - recruitment relations for Klamath basin in salmon and steelhead. 3) Maintain fish screens on the lower Sacramento and San Joaquin River systems.

Idaho 1-143-R — Melvin Reingold — Completed 1981

Test rearing of anadromous fish - Evaluate survival, contribution to the fishery, and returns of pond-reared spring chinook on the upper reaches of the Salmon River drainage.

Oregon AFC-92 — John P. Harville — Completed 1981

Chinook salmon maturity evaluation - Collect data on stage of maturity, length, and weight of chinook and coho salmon taken by trollers.

Oregon AFC-99 — Stephen Lewis — F- 47,819 S- 47,819

Management of the troll salmon fishery - Sample coastwide troll salmon landings and tabulate data as required for various State and Federal management programs.

Oregon AFC-100 — Dennis Isaac — Completed 1981

Identification of salmon stocks in Oregon - Coordinate and supervise coded wire tagging studies for Oregon programs and operate the tag recovery center at Clackamas, Oregon.

Oregon AFC-102 — Jim Lichatowich — F-224,232 S-224,232

Research and development of Oregon's coastal fish stocks - Conduct field investigations on fall chinook and coho in the Sixes, Coquille and Elk Rivers.

Oregon AFC-111 — John Harville — F-107,000 S- 53,500

Regional Mark Processing Center - Operate the Regional Mark Processing Center for identification of salmon stocks tagged, released and recovered in west coast fisheries.

Oregon AFC-112 — Jim Lichatowich — F- 62,480 S- 62,480

Stock assessment and genetic study of anadromous fish - Extract, compile, and analyze coded wire tag data to determine ocean survival, distribution and contribution of selected hatchery and wild stocks.

Oregon AFC-113 — Steve Lewis — F-278,530 S-139,265

Joint Oregon-Washington multijurisdictional salmon management program - Tag hatchery and wild stocks. Monitor the commercial and recreational ocean salmon catch at all Oregon landing ports, recover tagged fish, remove and decode tags and enter information in agency computers.

Oregon AFC-117 — John Harville — F- 36,936 S- 36,936

Assessment of the ocean distribution and contribution of northern California and southern Oregon fall chinook stocks - Initiate a logbook program and a concentrated tag recovery effort for depressed Klamath River fall chinook stocks in response to management needs of the Pacific Fishery Management Council.

Washington AFC-84 — Gary C. Bailey — F- 13,000 S- 13,000

Development of a spawning gravel cleaning machine - Develop a machine for removal of detrimental fine materials in natural salmon spawning beds.

Washington AFC-86 — Rick D. Cardwell — Completed 1981

Hood Canal salmon studies - Study chum salmon, their prey and predators, and size of stocks.

Washington AFC-90 — Lloyd Phinney — F- 63,550 S- 63,550

Washington ocean salmon comprehensive sampling program - Monitor the commercial and sport fisheries catch at major ports for mark recovery, biological and catch and effort data for State and MFCMA management.

Washington AFC-97 — Ernest Salo — F- 49,770 S- 49,770

Big Beef Creek chum production assessment - Determine egg-to-fry survival as a measure of spawning gravel cleaning success and continue studies of the role of visual and olfactory cues in species recognition by chum and coho during upstream migration.

Washington AFC-103 — Don Seller — F- 43,130 S- 43,130

Freshwater salmon production evaluation - Operate upstream and downstream counting stations on 4 western Washington River systems to measure natural salmon production.

Washington AFC-107 — Rick Granstrand, Skagit River Cooperative — F- 19,092 S- 19,092

Skagit River spring chinook radio-tracking study - Tag Skagit River spring chinook with radio-transmitters and track their movement through the Skagit River system.

Washington AFC-109 — Michael Barclay, Nooksack Indian Tribe — F- 16,000 S- 16,000

Nooksack River spring chinook radio-tracking study - Tag Nooksack River spring chinook with radio-transmitters and track for indication of their migration, behavior, timing and location of spawning.

Washington AFC-110 — Kurt L. Fresh — F- 19,985 S- 19,985

Salmon-herring predator/competitor interactions - Analyze stomach contents of salmon and herring for information on growth and survival of these species in Puget Sound.

Washington AFC-114 — Lee Blankenship — F-394,360 S-197,180

Joint Washington-Oregon multijurisdictional salmon management program - Tag hatchery and wild stocks. Monitor the commercial and recreational ocean salmon catch at Washington landing ports, recover tagged fish, remove and decode tags and enter information in agency computers.

Washington AFC-115 — Steve Schroder — F- 31,390 S- 31,390

Lake Washington simulation model - Determine by simulation modelling, the effects of implanting trout and various fishery management techniques upon sockeye, chinook, and coho that utilize the Lake Washington watershed.

Washington AFC-116 — Dick Stone — F- 16,000 S- 16,000

Coastal commercial net sampling - Collect data on catch and effort, day fished, gear type, species, age and sex of salmon taken by the commercial net fishery in Grays Harbor and Willapa Bay.

Striped bass:

Alabama AFCS-12 — R. Vernon Minton — F- 60,086 S- 60,086 (Includes FWS share)

Striped bass production and stocking experiments in Alabama coastal areas (Study No.2) - To reestablish a striped bass fishery in Alabama by aquaculture and release of fingerlings.

Alabama AFC-13 — Wayne Shell — F- 16,650 S- 16,650

Increasing yield of striped bass fingerlings through intensive culturing methods - Develop diets for larval and postlarval fish and determine disease organisms affecting survival and recommend treatment.

Maryland AFC-11 — F. Douglas Martin — F-140,818 S- 71,137

Striped bass research, Maryland - To estimate striped bass egg and larval distribution and abundance in the Potomac estuary.

Massachusetts AFCS-18 — Randall Fairbanks — F- 36,466 S- 18,234

Characterization of Massachusetts commercial striped bass landings - Determine age and sex by season and location of commercially caught striped bass in Massachusetts waters.

Mississippi AFCS-7 — Thomas D. McIlwain — F- 51,230 S- 51,230

Striped bass restoration program - Mississippi Gulf Coast - Stock South Carolina striped bass in the Biloxi Bay system and establish a strain which will use the coastal streams, estuaries, and open Gulf of Mexico waters.

New Jersey AFC-3 — Peter J. Himchak — Completed 1981

Monitoring of the status of the striped bass population in New Jersey - To determine the spawning and recruitment success of striped bass in the Delaware River.

New Jersey AFC-4 — Peter J. Kimchak — F- 76,000 S- 38,000

Monitoring of the status of the striped bass population in New Jersey II - Characterize the striped bass fishery in New Jersey waters, estimate young-of-the-year recruitment to the fishery, and examine over-wintering schools of striped bass in state waters.

New York AFC-10 — Byron Young — F- 38,127 S- 38,127

A study of the striped bass in the marine district of New York State #3 - Investigate age, weight, length, and sex structure of the striped bass in New York coastal waters and study year-class production in the Hudson River.

New York AFC-11 — Robert E. Brandt — F- 71,861 S- 35,939

Biology and management of striped bass in New York waters - To provide useful and vitally needed information for development of interim regulations for striped bass conservation and management in state waters.

North Carolina AFC-18 — Michael W. Street — F- 31,000 S- 15,500

An investigation of size, age, and sex of North Carolina striped bass - To determine size, age, and sex of striped bass found in the Roanoke River, Albemarle Sound and the Atlantic ocean off North Carolina.

Rhode Island AFC-4 — Richard Sisson — F- 40,000 S- 20,000

Striped bass stock assessment in Rhode Island waters - Characterize the composition of Rhode Island striped bass commercial landings to help assess the current status of coastal stocks and determine the level of exploitation by various fisheries.

Virginia AFC-11 — George C. Grant — F-102,000 S- 51,000

Assessment of larval striped bass stocks in Virginia waters - To estimate striped bass egg and larval abundance and distribution in the York River system.

Virginia AFC-12 — Robert K. Dias — F-131,924 S- 80,823

Striped bass research, Virginia - To establish relative numbers of juvenile striped bass and identify cohabitant species in the James, York, and Rappahannock River systems.

Others:

Alabama 2-330-R — Walter Tatum — F-168,300 S- 56,100

Research and development of Alabama coastal fisheries - Project 1: Monitor the abundance of larval, post-larval juvenile and adult fish, blue crabs and oysters. Project 2: Determine age, growth, condition and migratory patterns of red snapper, spotted seatrout and Florida pompano. Project 3: Determine mariculture potential of such marine species as bull minnows, red drum, spotted seatrout, shrimp and red snapper.

Arkansas 2-317-R — Scott Henderson — F- 9,525 S- 3,175

Determine the feasibility of commercial fish production in sewage oxidation lagoons - Determine effect of the quality of domestic waste water on the growth and habits of the fish.

California 4-44-D — Richard Klingbeil — Completed 1981

Fisheries monitoring, assessment, and evaluation - Survey and sample landings of northern anchovy, Pacific sardine, Pacific mackerel, jack mackerel, and other resources of the southern California bight.

California 4-45-D — Richard Dixon — Completed 1981

Demersal nearshore commercial invertebrate evaluation - Monitor and assess the condition of the invertebrate resources of commercial value. Includes sea urchins, rock crabs, and abalone.

California 4-52-D — Richard Klingbeil — F-102,147 S- 34,049

Fisheries monitoring, assessment, and evaluation - Survey and sample landings of northern anchovy, Pacific sardine, Pacific mackerel, jack mackerel, and other resources of the southern California bight.

California 4-53-D — Richard Dixon — F- 92,178 S- 30,906

Demersal nearshore commercial invertebrate evaluation - Monitor and assess the condition of the invertebrate resources of the commercial value. Includes sea urchins, rock crabs, and abalone.

Florida 2-341-R — Karen Steidinger — F-110,112 S- 36,704

Florida's marine resources research, development, and management program - Project 1: Establish population and catch information for the management of selected marine vertebrate and invertebrate species. Project 2: Establish life history information for the management of marine fisheries. Project 3: Establish and refine aquaculture techniques for spawning and rearing of Macrobrachium.

Louisiana 2-342-R — L. Brandt Savoie — F- 42,750 S- 14,250

A study of areal and seasonal availability of the American eel (Anguilla rostrata) in southeastern coastal Louisiana - Determine area availability, seasonal availability, and incidental catch of American eel in eel pots.

Louisiana 2-343-R — Gerald Adkins — F- 48,750 S- 16,250

An evaluation of gill nets of various mesh sizes - Evaluate the efficiency of mono- and multifilament gill nets of various sizes for capturing important commercial finfish.

Louisiana 2-364-R — Vincent Guillory — F- 61,215 S- 20,405

A study of Gulf menhaden in Louisiana - Determine species composition, number and weight of incidental catch of fish in the Louisiana Gulf menhaden purse seine fishery and evaluate various external tags for marking Gulf menhaden.

Maryland AFC-10 — C. J. O'Dell — F- 81,546 S- 81,546

Survey and inventory of anadromous fish spawning areas - To determine which streams in the Patuxent River basin support spawning migrations of anadromous and estuarine fish and to identify species and spawning areas.

Massachusetts 3-287-R — Arnold B. Howe — F- 66,845 S- 66,845

Coastwide fishery resource assessment - Determine species composition and abundance of fish populations in coastal Massachusetts waters.

Mississippi 2-296-R — J. Y. Christmas — F-104,710 S- 34,903

Fishery monitoring and assessment - Collect representative samples of shellfish (except oysters) and finfish as they occur in territorial waters each month.

Mississippi 2-325-R — Robin M. Overstreet — F- 52,691 S- 17,563

Commercial fishes of Mississippi: spawning and miscellaneous biological factors - Determine the season of spawning, size of spawning fish, fecundity, and possible area of spawning for the spotted seatrout and red drum in Mississippi Sound and adjacent waters.

New Hampshire 3-350-R — John Nelson — F- 38,625 S- 12,875

An investigation of commercially important fisheries in New Hampshire coastal and estuarine waters - Monitor seasonal fluctuations, habitat and food sources of commercially important finfish and shellfish in the inshore waters of New Hampshire.

North Carolina AFCS-16 — Michael W. Street — F-170,355 S-170,335

North Carolina anadromous fisheries management program - Collect, analyze, and report information on North Carolina anadromous fisheries for use in management of the fisheries and eventual preparation of management plans.

Oregon 1-151-R — Robert Demory — F-192,925 S- 64,309

Groundfish and shrimp assessment - Collect and analyze fishery and research data to determine stock size, yield, catch per unit effort, and mortality rates.

Puerto Rico 2-333-R — Charles Boardman — F-164,669 S- 54,890

Monitoring and assessment of Puerto Rico's commercial fisheries - Determine seasonal and yearly variation in deepwater demersal fish and spiny lobster.

Puerto Rico 2-374-R — Carmen Gonzalez — F- 32,750 S- 10,917

Pilot project for culture of agar producing algae in Puerto Rico - Determine the potential for culturing agar-producing algae on a commercial scale around the island of Puerto Rico.

Puerto Rico 2-377-R — Dr. Manuel L. Hernandez Avila — F- 26,250 S- 8,750

Feasibility of hatchery culture of queen conch, Strombus gigas in Puerto Rico - Develop technology to culture queen conch with emphasis on mass production of larvae.

Rhode Island 3-313-R — Timothy R. Lynch — F- 32,250 S- 10,750

Coastal fishery resource assessment - Design and implement a seasonal bottom trawl survey for the collection of fishery statistical data.

Virgin Islands 2-335-R — Richard A. Dewey — F- 38,861 S- 12,954

Commercial fisheries research and development in the U.S. Virgin Islands - To identify needs and implement management strategies to achieve the optimum sustained use of the Virgin Islands commercial marine fishery resources: Part I: Fisheries statistics of the Virgin Islands - To collect, analyze, and evaluate fisheries statistics in the U.S. Virgin Islands in order to acquaint administrative levels with the real value and extent of Virgin Islands fisheries and so enable enhancement through planning facilities and programs. Part II: Monitoring and assessment of Virgin Islands fisheries - To identify, recommend, and implement commercial fishery management practices for the Virgin Islands marine resources.

SHELLFISH

Clams:

Maine 3-348-R — Harold C. Winters — F- 20,327 S- 20,328

Clam flat pollution abatement - Conduct population surveys to determine status and potential productive capabilities of Maine's clam resources and assess nature/sources of pollutants affecting commercially harvestable shellfish areas.

Oregon 1-150-R — Thomas Gaumer — Completed 1981

Commercial clam production - Conduct subtidal bay clam distribution and abundance surveys in Oregon's estuaries.

Crabs:

Alaska 5-44-R — Allen S. Davis — F- 74,200 S- 32,600

King and tanner crab studies in Cook Inlet - Develop a method for assessing annual variation of Cook Inlet king and tanner crab population abundance and relate this abundance to allowable commercial harvest.

Alaska 5-47-R — William Colgate — F- 92,400 S- 78,800

Investigations of life history and fishery for tanner crab in Alaska - Obtain information on distribution, abundance, migration, growth, mortality, and size and age composition of tanner crab stocks in the Kodiak area.

New Jersey 3-354-D — Gale Critchlow — F- 10,125 S- 3,375

Management of commercial fishery for blue crabs - Determine population parameters of the blue crab resource in Delaware Bay.

Washington 1-135-R — Tom Northup — F- 65,437 S- 21,813

Coastal dungeness crab project - Sample crab at canneries and landing ports to collect management data.

Lobster:

Maine 3-300-R — James C. Thomas — F- 63,598 S- 63,598

Lobster stock assessment - Survey commercial lobster catch, determine stock-progeny recruitment relationships, and develop lobster management plan.

New York 3-333-R — Philip T. Briggs — F- 18,750 S- 18,750

Movement, mortality rates, and growth of American lobster - Tag and recover American lobsters to determine growth, movement, and mortality.

Mussels:

Illinois 3-327-R — Richard E. Sparks — F- 4,300 S- 1,433

Effects of three commercial harvesting methods on mussel beds - Determine immediate and long-term effects of harvesting methods on Mississippi River mussel beds.

Kansas 2-378-R — Charles H. Cope — F- 4,300 S- 1,433

Freshwater mussel investigations - Assess the commercial fishing beds in Kansas and determine age structure and mussel community composition of Neosho and Verdigris River system.

Kentucky 2-367-R — Dr. James E. Sickel — F- 11,283 S- 3,762

Commercial mussel and asiatic clam fishery evaluation - Determine the effect of harvesting Corbicula upon clam population and population density of mussels.

Ohio 3-318-R — David S. Standbery — F- 19,419 S- 6,473

Management of Muskingum River mussel population - Study general composition and distribution of existing mussel fauna, and determine current location and size of mussel beds having commercial potential.

Tennessee 2-373-R — Earl Hayes — F- 18,750 S- 6,250

Mussel resources survey - Determine the current population of mussels in the waters of Tennessee.

Oysters:

Florida 2-370-D — Lawrence Sangaree — F- 25,878 S- 8,626

Oyster cultivation by reef construction - Develop techniques to enable oystermen to increase commercial production.

Louisiana 2-353-D — William Perret — F-164,600 S- 54,867

Permanent monument for oyster lease surveying - Place additional water bottom acreage under monument control and establish permanent monuments throughout coastal Louisiana for the purpose of surveying oyster leases.

Virginia 3-265-R — Dexter S. Haven — Completed 1981

Present and potential productivity of Baylor Grounds - Monitor presence or absence of shell/oysters and the distribution of oyster drills in the tidal waters of Pocomoke Sound, the Eastern Shore, and the James and Potomac Rivers.

Virginia 3-314-D — VMRC Staff — F- 49,065 S- 49,065

Development of oyster resources - Plant oyster cultch to provide an adequate spatfall-collecting medium and monitor success of oyster spatfall and growth.

Washington 1-142-R — Ron Westley — Completed 1981

Improved techniques for use with domestic oysters - Evaluate the survival, growth, yield, and handling of different sources and types of domestic oyster seed.

Shrimp:

Alaska 5-48-R — Peter B. Jackson — F-128,000 S- 63,300

Pandalid shrimp studies - Obtain information on the postlarval life histories, distribution, and abundance of the major exploited shrimp stocks in the Kodiak area and determine the effects of fishing on these stocks.

Maine 3-330-R — Daniel F. Schick — Completed 1980

Shrimp stock assessment - Conduct a summer and winter sampling program to mointor the status of the stock and establish parameters for determining population abundance and appropriate allowable harvests.

Maine 3-341-R — Alden P. Stickney — F- 0 S- 0

Environmental physiology of northern shrimp (Pandalus borealis) - Determine growth and survival dependency upon diatom (Thalassiosira rotula), continue plankton survey in the Sheepscot River estuary and monitor offshore temperatures during fall and winter months.

Texas 2-328-R — Lynn Benefield — F- 56,901 S- 18,967

Studies of shrimp populations in selected coastal bays of Texas - Determine shrimp movements and abundance in order to recommend shrimp harvest regulations.

Washington 1-154-R — Tom Northup — F- 17,760 S- 5,906

Coastal pink shrimp study - Conduct survey cruises and monitor coastal pink shrimp landings to collect biological information needs for management under the MFCMA.

Others:

Georgia 2-319-R — Henry L. Ansley — F- 95,435 S- 31,812

Studies and assessment of Georgia's fishery resources - Project I: Survey of Georgia's major marine fishery resources - Monitor penaeid shrimp and blue crab populations in coastal Georgia estuaries in order to provide managers with timely information for decisionmaking; and, to increase the data base of knowledge relative to selected aspects of the life histories of Georgia's major coastal finfishes. Project II: Penaeid shrimp migration and growth along the Georgia coast - Determine movement and growth of commercially important penaeid shrimp in estuaries and coastal marine waters along the Georgia coast. Project III: Juvenile penaeid shrimp, blue crab, and finfish assessment in coastal Georgia - To define the major nursery areas in Georgia's estuaries. Project IV: Identification and quantification of spiny lobster populations on the Georgia outer continental shelf. Identify and quantify the spiny lobster population(s) on selected live bottom areas of the Georgia outer continental shelf and determine the feasibility of commercial harvest.

New Jersey 3-290-R — Harold H. Haskin — Completed 1981

Oyster drill control by hydraulic dredging in Delaware Bay - Improve oyster production by reducing losses from oyster drills in controlled areas.

New Jersey 3-332-R — Thomas McCloy — F- 36,301 S- 36,301

Inventory of New Jersey estuarine shellfish - Inventory estuarine shellfish resource and monitor annual recruitment of hard clams and oysters, evaluate efficacy of hard clam relay program.

New York 3-307-D — Stephen A. Hendrickson — F- 52,000 S- 52,000

Shellfish transplant in the Marine District of New York State #3 - Transplant shellfish from uncertified to clean water areas for cleansing and market harvesting and introduce spawning stock to selected bays and harbors.

New York 3-308-D — John Hofmann — F- 30,000 S- 39,700

Operation of mobile laboratories for shellfish sanitation control #2 - Make sanitary examinations of shellfish harvest areas and help food inspectors make monthly evaluations of the general sanitation of New York's processing plants.

New York 3-309-R — Richard E. Fox — F- 38,000 S- 43,450

Assessment of New York's shellfish resources - Establish a population index program to measure relative condition of the hard clam resource of Great South Bay and locate shellfish resources by exploratory fishing.

Texas 2-312-R — Terry J. Cody — F- 67,500 S- 22,500

Shrimp and finfish investigations in the northwest Gulf - Study movement and growth of the subject stocks by mark-recapture experiments.

Washington 1-152-R — Tom Northup — Completed 1981

South coast marine fish/shellfish monitoring - Collect landings and biological data on groundfish, shrimp, and clams for improved resource management.

STATISTICS

American Samoa 4-47-D — Henry Sesepasara — F- 10,500 S- 0

Statistical analysis of American Samoa fisheries - Collection of catch-effort and biological data from foreign longline and domestic fishing vessels.

Connecticut 3-278-R — Robert A. Jones — F- 36,510 S- 15,071

Commercial fishery monitoring program - Monitor catch/effort statistics and certain economic factors of the commercial fishery and provide a data base through computer analysis for the development of management proposals.

Maryland 3-345-D — Howard J. King, III — F-103,273 S-103,273

Maryland fisheries statistics - Maintain a comprehensive catch reporting system for Maryland commercial fisheries.

Massachusetts 3-194-D — Charles O. Anderson — F- 13,431 S- 44,810

Collection, compilation, evaluation, and dissemination of commercial fisheries statistics - Develop a complete and accurate commercial fisheries statistical program for all phases of the State's varied commercial fishing enterprises.

Missouri 2-363-R — Dan Dickneite — F- 35,354 S- 11,784

Research and management of Missouri's commercial fisheries resources - Determine the number of commercial fishermen, pounds of fish harvested, and the wholesale value for Missouri's River commercial fisheries. Project I: Missouri's commercial fishery harvest - To determine the number of commercial fishermen, pounds of fish harvested, and the wholesale value for Missouri's river commercial fisheries. Project II: Maintenance, enhancement, and evaluation of commercial fisheries habitat created in the Missouri and Mississippi River through agency coordination - To preserve and enhance Missouri's commercial fisheries by motivating the various construction agencies to preserve and restore fish habitat in future and on-going projects and to assist in evaluating these efforts. Project III: The development of a qualitative system to evaluate Missouri's commercial fish populations - To select population parameters and establish acceptable levels of each which would provide a qualitative method of assessing the status of important commercial fish species populations such as carp, buffalo, sp., catfish sp., and freshwater drum in the Missouri River and to determine the most effective sampling methods and techniques to obtain a representative sample for assessing those populations.

Nebraska 2-359-R — Larry A. Witt — F- 19,125 S- 6,375

Population estimates of Missouri River fishes - Use mark-recapture data to estimate populations.

Nebraska 2-360-R — Melvin Taylor — F- 3,750 S- 1,250

Inland commercial fisheries investigations - Monitor activities of the commercial fishermen and collect data from harvested species.

New Hampshire 3-343-D — Leigh R. Welcome — F- 18,000 S- 6,000

Statistical data acquisition for the marine fisheries of New Hampshire - Develop and implement a catch and effort statistical collection system for the finfish and lobster commercial fisheries of New Hampshire.

New Jersey 3-353-D — John Makai — F- 15,000 S- 5,000

Commercial fisheries data collection - Initiate a small scale landings data collection system by the use of a license/credit card weighout slip system for New Jersey's commercial oyster fishery.

Oklahoma 2-301-R — Harold Namminga — F- 1,652 S- 551

Commercial fishery statistics #2 - Collect and analyze comercial fishery landings statistics from the State's four major industries: commercial fishing, mussel fishery, bait harvest and fish farming.

Puerto Rico 2-331-R — Jose A. Suarez Caabro — F-141,750 S- 47,250

Commercial fisheries statistics - Collect and analyze commercial fisheries catch statistics from coastal Puerto Rico.

Rhode Island 3-302-D — Timothy Lynch — F- 11,397 S- 11,397

Lobster logbook and statistical analysis - Use a logbook system in the Rhode Island lobster fishery to acquire catch and effort data necessary for managing the resource.

South Carolina 2-357-R — Dale Theiling — F- 32,700 S- 10,900

South Carolina fisheries statistics program (FY 1980, 1981, 1982) - Collect catch, effort, and economic data of South Carolina's commercial fisheries. Compile, analyze, and provide information to appropriate users.

Texas 2-310-R — Larry McEachron — F-199,199 S- 66,400

Finfish harvesting studies in Texas estuaries - Study statistics and method of capture of commercial species in estuaries.

Texas 2-311-R — Claude Hamilton — F- 28,50(S- 9,50(

Commercial fisheries catch statistics - Gather, compile, publish, and make available fishery statistics for fish, crab, and oyster landings from the coastal area.

Virginia 3-335-D — William L. Baker — F- 36,919 S- 12,307

Commercial finfish and shellfish statistical collection - To collect and compile monthly catch data on the Virginia commercial fisheries harvest.

ADMINISTRATIVE ORGANIZATIONS

COOPERATORS

State and others	Agency	Address
Alabama	Department of Conservation and Natural Resources	State Administration Building 64 North Union Street Montgomery 36130
	Auburn University, Fisheries Department, Swingle Hall	Auburn 36830
American Samoa	Office of Marine Resources Government of American Samoa	Pago Pago 96799
Alaska	Department of Fish & Game	Box 3-200 Juneau 99802
Arizona	Game and Fish Commission	#2 Natural Resources Drive Markham & I-430 Little Rock 72205
California	Department of Fish & Game The Resources Agency	1416 Ninth Street Sacramento 95814
Colorado	Division of Wildlife	6060 Broadway Denver 80216
Connecticut	Preservation & Conservation Division, Department of Environmental Protection	State Office Building 165 Capitol Avenue Hartford 06115
Delaware	Division of Fish and Wildlife Department of Natural Resources & Environmental Control	P.O. Box 1401 Dover 19901
Florida	Department of Natural Resources	3900 Commonwealth Boulevard Tallahassee 32303
Georgia	Department of Natural Resources	Trinity-Washington Building 270 Washington Street, SW Atlanta 30334
Guam	Government of Guam	Agana 96921
Hawaii	Division of Fish & Game Department of Land & Natural Resources	1151 Punchbowl Street Honolulu 96813
Idaho	Fish & Game Department	600 South Walnut, Box 25 Boise 83707
Illinois	Department of Conservation	605 Wm. Stratton Building 400 S. Spring Street Springfield 62706
Indiana	Division of Fish & Wildlife Department of Natural Resources	607 State Office Building Indianapolis 46204
Iowa	State Conservation Commission	Wallace State Office Building 9th and Grand Des Moines 50319

Kansas	Fish and Game Commission	Box 54A Rural Route 2 Pratt 67124
Kentucky	Department of Fish & Wildlife Resources	592 East Main Street Frankfort 40601
Louisiana	Department of Wildlife and Fisheries	126 Wildlife and Fisheries Building 400 Royal Street, Room 203A New Orleans 70130
Maine	Department of Marine Resources	State House Station-21 Augusta 04333
Northern Mariana Islands	Division of Marine Resources	Office of the Governor Saipan 96950
Maryland	Tidewater Administration Department of Natural Resources	Tawes State Office Building Annapolis 21401
Massachusetts	Division of Marine Fisheries Department of Fisheries, Wildlife, and Recreational Vechicles	Leverett Saltonstall Building 100 Cambridge Street Boston 02202
Michigan	Department of Natural Resources	Box 30028 Lansing 48909
Minnesota	Division of Fish and Wildlife Department of Natural Resources	300 Centennial Building 658 of the Governor
Mississippi	Department of Wildlife Conservation	Box 451 300 Robert E. Lee Building Jackson 39205
Missouri	Department of Conservation	P.O. Box 180 Jefferson City 65101
Montana	Fish and Game Department	1420 E. Sixth Avenue Helena 59601
Nebraska	Game and Parks Commission	Box 30380 2200 North 33rd Street Lincoln 68503
Nevada	Department of Fish and Game	Box 10678 Reno 89520
New Hampshire	Fish and Game Department	34 Bridge Street Concord 03301
New Jersey	Division of Fish, Game & Wildlife, Department of Environmental Protection	CN-400 Trenton 08625
New Mexico	Department of Game and Fish	State Capitol Building Sante Fe 87501
New York	Division of Marine Resources	Building 40, State of New York Stony Brook 11790
North Carolina	Division of Marine Fisheries Department of Natural Resources and Community Development	Box 769 Morehead City 28557
North Dakota	State Game and Fish Department	2121 Lovett Street Bismarck 58501

Ohio	Division of Wildlife Department of Natural Resources	Fountain Square Columbus 43224
Oklahoma	Department of Wildlife Conservation	1801 North Lincoln Oklahoma City 73105
Oregon	Department of Fish and Wildlife	506 SW Mill Street Portland 97208
	Pacific Salmon Inter-agency Council	741 State Office Building Portland 97201
	Oregon State University	Corvallis 97331
Pennsylvania	Fish Commission	P.O. Box 1673 Harrisburg 17120
Puerto Rico	Marine Resources Development Corporation	P.O. Box 229 Old San Juan Station
Rhode Island	Division of Fish and Wildlife Department of Environmental Management	Washington County Government Center Tower Hill Road Wakefield 02879
South Carolina	Wildlife and Marine Resources Department	P.O. Box 167 Columbia 29202
South Dakota	Department of Game, Fish and Parks	State Office Building No. 1 Pierre 57501
Tennessee	Wildlife Resources Agency	P.O. Box 40747 Ellington Agricultural Center Nashville 37204
Texas	Parks and Wildlife Department	Coastal Fisheries Branch 4200 Smith School Road Austin 78744
Utah	Division of Wildlife Resources State Department of Natural Resources	1596 West North Temple Salt Lake City 84116
Vermont	Fish and Game Department	5 Court Street Montpelier 05602
Virgin Islands	Department of Conservation and Cultural Affairs	P.O. Box 4340 St. Thomas 00801
Virginia	Marine Resources Commission	P.O. Box 756 2401 West Avenue Newport News 23607
	Institute of Marine Science	Gloucester Point 23062
Washington	Department of Fisheries	115 General Administration Building Olympia 98504
	Fisheries Research Institute	University of Washington Seattle 98105
West Virginia	Department of Natural Resources	1800 Washington Street, East Charleston 25305
Wisconsin	Department of Natural Resources	Box 7921 Madison 53707
Wyoming	Game and Fish Department	Box 1589 Cheyenne 82001

Northwest Region

Colorado	South Dakota	H.A. Larkins, Regional Director
Idaho	Utah	Nancie Bell, Grant-in-Aid Coordinator
Montana	Washington	7600 Sand Point Way N.E. BIN 015700
North Dakota	Wyoming	Seattle, Washington 98115
Oregon		Phone: 206-527-6150

Southeast Region

Alabama	Nebraska	Jack Brawner, Acting Regional Director
Arkansas	New Mexico	I.B. Byrd, Chief, Grant Program
Florida	North Carolina	Administration Branch
Georgia	Oklahoma	Duval Building
Iowa	Puerto Rico	9450 Koger Boulevard
Kansas	South Carolina	St. Petersburg, Florida 33702
Kentucky	Tennessee	Phone: 813-893-3141
Louisiana	Texas	
Mississippi	Virgin Islands	
Missouri		

Northeast Region

Connecticut	New Jersey	Allen E. Peterson, Regional Director
Delaware	New York	John E. Cookson, Chief, State/Federal Relations Br.
Illinois	Ohio	Federal Building
Maine	Rhode Island	14 Elm Street
		Gloucester, Massachusetts 01930
Maryland	Vermont	Phone: 617-281-3600
Massachusetts	Virginia	
Michigan	West Virginia	
Minnesota	Wisconsin	
New Hampshire		

Southwest Region

American Samoa	Hawaii	Alan W. Ford, Regional Director
Arizona	Nevada	James Morgan, Resource Management
California	Trust Territory of	Branch
	the Pacific Islands	300 South Ferry Street
Guam	Northern Marianas	Terminal Island, California 90731
		Phone: 213-548-2518

Alaska Region

Alaska	Robert W. McVey, Regional Director
	Ron Berg, Fisheries Management
	Division
	P.O. Box 1668
	Juneau, Alaska 99801
	Phone: 907-586-7228

PUBLICATIONS*

In carrying out project activities about 300 State scientists are continously employed to gather information for better management of the fishery resources and to solve fishery problems. These studies have resulted in 628 publications, of which 539 have appeared in scientific journals and 89 have been for partial fulfillment of the requirement for advanced degrees from educational institutions. The literature citations list the project numbers in parentheses.

Some of the reports are available from the National Technical Information Service (NTIS). NTIS sells these reports as either paper or microfiche copies. Its address is:

National Technical Information Service
U.S. Department of Commerce
Springfield, VA 22151

ANDERSON, CHARLES O., GERALD M. NASH and CHRISTOPHER KELLOGG
1980. Massachusetts lobster statistics. Massachusetts Division of Marine Fisheries, Tech. Ser. No. 16, 20 pp.
(MA 3-194-D)

BOARDMAN, CHARLES, and DEBORAH WEILER
1980. Aspects of the life history of three deepwater snappers around Puerto Rico. Fishery Res. Lab., Marine Res.Dev. Corp., P.R. Rep. Proceedings of Gulf and Caribbean Fshrs. Inst. 32 Ann Ses., Nov. 1979 (P.R. 2-258-R)

CARDWELL, RICK D. and ROBERT R. KOONS
1981. Biological considerations for the siting and design of marinas and affiliated structures in Puget Sound. Washington Dept. of Fisheries, Technical Report No. 60, 31pp. (WA. 1-127-R)

CODY, TERRY J. and R.M. AVENT
1981. Mark-recapture studies of penaeid shrimp in Texas 1978-1979. Tx. Prks. & Wildl. Dept., Mgmt. Data Series No. 14 (TX. 2-312-R)

CODY, TERRY J. and R.M. AVENT
1981. Assessment of bottom longline fishing off the Central Texas coast. Tx. Prks. & Wildl. Dept., Mgmt. Data Series No. 16 (TX 2-312-R)

CODY, TERRY J., BILLY E. FULS, GARY C. MATLOCK and C.E. BRYAN
1981. Assessment of bottom longline fishing off the central Texas coast, a completion report. Tx. Prks. & Wildl. Dept., Mgmt. Data Series No. 22 (TX 2-312-R)

DEARDORFF, THOMAS L. and ROBIN M. OVERSTREET
1980. Contraceacum multipopillatum (C. Robustum) from Fishes and Birds in the Northern Gulf of Mexico. J. Parasitol., 66(5), 1980, pp. 853-856 (MS 2-325-R)

DEARDORFF, THOMAS L. and ROBIN M. OVERSTREET
1981. Review of Hysterothylacium and Iheringascaris (both previously = Thynnascaris) (Nemotoda:Anisakidae) from the Northern Gulf of Mexico. Proc. Biol. Soc. Wash. 93(4), 1980, pp. 1035-1079 (MS 2-325-R)

DONALDSON, WILLIAM E., R.T. COONEY, and J.R. HILSINGER
1981. Growth, age, and size at maturity of Tanner crab, Chionoecetes bairdi M.J. Rathbun, in the northern Gulf of Alaska (Cecapoda, Brachyura). Crustaceana 40(3): 286-302 (AK 5-41-R)

DUKER, GARY J.
1977. Nest site selection by chum salmon (Oncorhynchus keta) in a spawning channel. M.S. Thesis, University of Washington, 113pp. (WA AFC-82)

*Supplemental to activity report publications for previous fiscal years.

FACEY, DOUGLAS E. and GEORGE W. LaBAR
1981. Biology of American eels in Lake Champlain, Vermont. Trans. Amer. Fish. Soc. 110 : 396-402 (VT 3-241-D)

FLAGG, LEWIS
1981. Development of anadromous fish resources. Maine Department of Marine Resources, Informational Leaflet 5 pp. (ME AFC-17)

FOURNIE, JOHN W. and MOBASHIR A. SOLANGI
1980. Prevalence of Eimeria funduli (Protozoa: Eimeriidoe) in the longnose killifish, Fundulus similis from Horn Island, Mississippi. Gulf Res. Rpts., Vol. 6 No. 4, pp. 427-428 (MS 2-325-R)

FOX, RICHARD E.
1981. An estimate of the recreational harvest of hard clams from Great South Bay, New York. New York Fish and Game J. 28 (1) : 82-87 (NY 3-263-R)

GREEN, ALBERT W. and KAREN L. THOMPSON
1981. Comparison between reported and estimated commercial finfish landings from the central Texas coast. TX Prks. & Wildl. Dept., Mgmt. Data Series No. 20 (TX 2-310-R)

HAMILTON, C.L.
1981. Texas commercial harvest statistics 1979-80. Tx. Prks. & Wildl. Dept., Mgmt. Data Series No. 26 (TX 2-311-R)

HARRIS, C. DUANE
1981. Survey of the intertidal and subtidal oyster resources of the Georgia coast. Ga. Dept. of Natural Resources, Coastal Resources Division May 1980 (GA 2-234-R)

HAWKINS, JESS H.
1981. Investigations of anadromous fishes of the Neuse River, North Carolina. NC Dept. of Nat'l Res. & Comm. Dev., Special Scientific Report No. 34, November 1980 (NC AFCS-10 and AFCS-13)

HAWKINS, W.E., M.A. SOLANGI and R.M. OVERSTREET
1981. Ultrastructural effects of the coccidium, Eimeria funduli Duszynski, Solangi and Overstreet, 1979 on the liver of the killifish. J. of Wildl. Diseases 1981, 4, 281-295 (MS 2-325-R)

HOFSTETTER, R.P.
1981. Rehabilitation of public oyster reefs damaged or destroyed by a natural disaster. TX Prks. & Wildl. Dept., Mgmt. Data Series No. 21 (TX 2-352-D)

HOORNBEEK, F.K. and P.M. BURKE
1981. Induced chromosome number variation in the winter flounder. J of Heredity 72 : 189-192. (NH 3-275-R)

JOHNSON, DAVID L. and MICHAEL T. METCALF
1982. Causes and controls of freshwater drum mortality during transportation, Trans. Amer. Fish. Soc. 111: 58-62 (Ohio 3-219-D)

JOHNSON, HARREL B., JOSEPH G. LOESCH, et al.
1981. Biology and management of mid-Atlantic fishes under extended juridsiction. North Carolina Division of Marine Fisheries, Spec. Sci. Rep. No. 36/Virginia Institute of Marine Science Spec. Rep. No. 236 in Appl. Mar. Sci. and Ocean Eng., 204 pp. (VA/NC AFCS-9)

JOSEPH, JAMES W.
1980. Evaluation of the 1980 Mullica River oyster transplant program. NJ Dept. Envir. Protect., Div. Fish, Game and Wildl., Miscell. Rep. No. SF-5 (NJ 3-322-R)

JUNEAU, CONRAD L. JR., and JUDD F. POLLARD
1981. A survey of the recreational shrimp and finfish harvests of the Vermilion Bay Area and their impact on commercial fishery resources. LA. Dept. Wildl. & Fish Tech. Bull. No. 33, July 1981 (LA 2-318-R)

KOONS, ROBERT R., and RICK D. CARDWELL.
1981. Significant areas for certain species of food fish and shellfish in Puget Sound. Washington Dept. of Fisheries, Tech. Rep. 59, 46pp. (WA 1-127-R)

KROUSE, JAY S.
1981. Movement, growth and mortality of American lobsters, Homarus americanus, tagged along the coast of Maine. NOAA Tech. Rep., NMFS SSRF-747 (ME 3-228-R)

LAWLER, ADRIAN R.
1980. Studies on Amyloodinium ocellatum (Dinoflagellata) in Mississippi Sound: Natural and Experimental Hosts. Gulf Research Repts., Vol 6, No. 4, 403-413, 1980. (MS 2-262-R)

LIBBY, DAVID A.
1981. Difference in sex ratios of the anadromous alewife, Alosa pseudoharengus, between the top and bottom of a fishway at Damariscotta Lake, Maine. Fish. Bull. 79 (1) : 207-211 (ME AFC-21).

LITTLE, EDWARD J. JR. and GARY R. MILANO
1980. Techniques to monitor recruitment of postlaraval spiny lobsters, Panulirus argus, to the FL. Keys. Fl. Marine Res. Publications No. 37, September 1980 (FL 2-341-R)

LOESCH, JOSEPH G., WILLIAM H. KRIETE, JR., and ERIC J. FOELL
1982. Effects of light intensiuty on the catchability of juvenile anadromous Alosa species. Trans. Amer. Fish Soc. 111: 41-44 (VA AFC-10)

MATLOCK, GARY C.
1981. Nonreporting of recaptured tagged fish by saltwater recreational boat anglers in Texas. Trans. Amer. Fish. Soc. 110: 90-92, 1981 (TX 2-310-R)

MC CLOY, THOMAS W.
1981. Assessment of the hard clam resource supporting the 1979 relay program. NJ Dept. Envir. Protec., Div. Fish, Game and Wildl., Miscell. Rep. No. SF-6 (NJ 3-332-R)

MC CLOY, THOMAS W.
Setting success and survival of hard clams in Great Bay during 1978 and 1979. NJ Dept. Envir. Protec., Div. Fish, Game and Wildl., Miscell. Rep. No. SF-7 (NJ 3-332-R)

MC EACHRON, L.W., A.W. GREEN, L.Z. BARRINGTON, M.G. WEIFELMAN, B. CAMPBELL-HOSTETTLER, R.A. SPAW, K.W. SPILLER, and J.C. BREWER
1981. Survey of finfish harvest by sport fishermen in selected Texas Bays, September-August 1974-74 and 1979-80. TX Prks. & Wildl. Dept., Mgmt. Data Series No. 24 (TX 2-310-R)

MC EACHRON, L.W. and A.W. GREEN
1981. Recreational finfish catch statistics for Texas bay systems, September 1979-August 1980. TX Prks. & Wildl. Dept., Mgmt. Data Series No. 25 (TX 2-310-R)

MOTTET, MADELON G.
1980. Research problems concerning the culture of clam spat and seed. Wash. Dept. of Fisheries, Tech. Rep. No. 63, 106pp. (WA 1-141-R)

MOTTET, MADELON G.
1980. Factors leading to the success of aquaculture with an emphasis on northern Japan. Wash. Dept. of Fisheries, Tech. Rep. No. 52, 83 pp. (WA 1-141-R)

MUDRAK, VINCENT
1981. Guidelines for economical commercial fish hatchery wastewater treatment systems. pp. 174-182 in Allen, L.J. and E.C. Kinney (eds.). Proceedings of the Bio-Engineering Symposium for Fish Culture, Traverse City, Michigan. Fish Culture Section of the American Fisheries Society and the Northeast Society of Conservation Engineers. (PA 3-337-R)

OTTO, SARA V. and PHYLLIS T. JOHNSON
1981. Histology of a bilateral gynandromorph of the blue crab, Callinectus sapidus Rathbun. Biolog. Bull. 161 : 236. (MD 3-310-R)

OVERSTREET, ROBIN M., and GEORGE W. MEYER
1981. Hemmorhagic lesions in stomach of rhesus monkey caused by a piscine ascaridoid nematode. J. Parasitol., 67(2) 1981, pp. 226-235 (MS 2-235-R)

SANDUSKY, M.J. and R.E. SPARKS
1979. Investigations of declines in fingernail clam (Musculium transversum) population in the Illinois River and Pool 19 of the Mississippi River. Bulletin of the American Malacological Union 1: 11-15. (IL 3-291-R)

SCHRODER, STEVEN L.
1981. The role of sexual selection in determining overall mating patterns and mate choice in chum salmon. Ph.D. Dissertation, University of Washington, 274 pp. (WA AFC-82)

SPARKS, R.E.
1980. Response of the fingernail clam populations in the Keokuk Pool (Pool 19) to the 1976-77 Drought. pp. 43-71 in Rasmussen, J.L., Editor. Proceedings of the Upper Mississippi River Bivalve Molluscs, May 3-4, 1979 (IL 3-291-R)

STICKNEY, ALDEN P.
1981. Laboratory studies on the development and survival of Pandalus borealis eggs in the Gulf of Maine. Pages 395-407 in Proceedings of the 1979 Symposium on Pandalid Shrimp, Kodiak, Alaska. Sea Grant Rep. 81-3. (ME 3-341-R)

STICKNEY, ALDEN P. and H.C. PERKINS
1981. Observations on the food of the larvae of the northern shrimp, Pandalus borealis Kryer (Decapoda, Caridea). Crustaceana 40 : 36-49. (ME 3-341-R)

SULLIVAN, JAMES R.
1979. The stone crab, Menippe mercenaria in southeastern Florida fishery. FL. Dept. of Nat'l. Res., Marine Res. Lab. No. 36, December 1979 (FL. 2-278-R)

SULLIVAN, J.R.
1980. Effects of desiccation and autospasy on egg hatching success in stone crab, Mennippe mercenaria. Fishery Bull. Vol. 77, No. 3, 1980 (FL. 2-278-R)

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